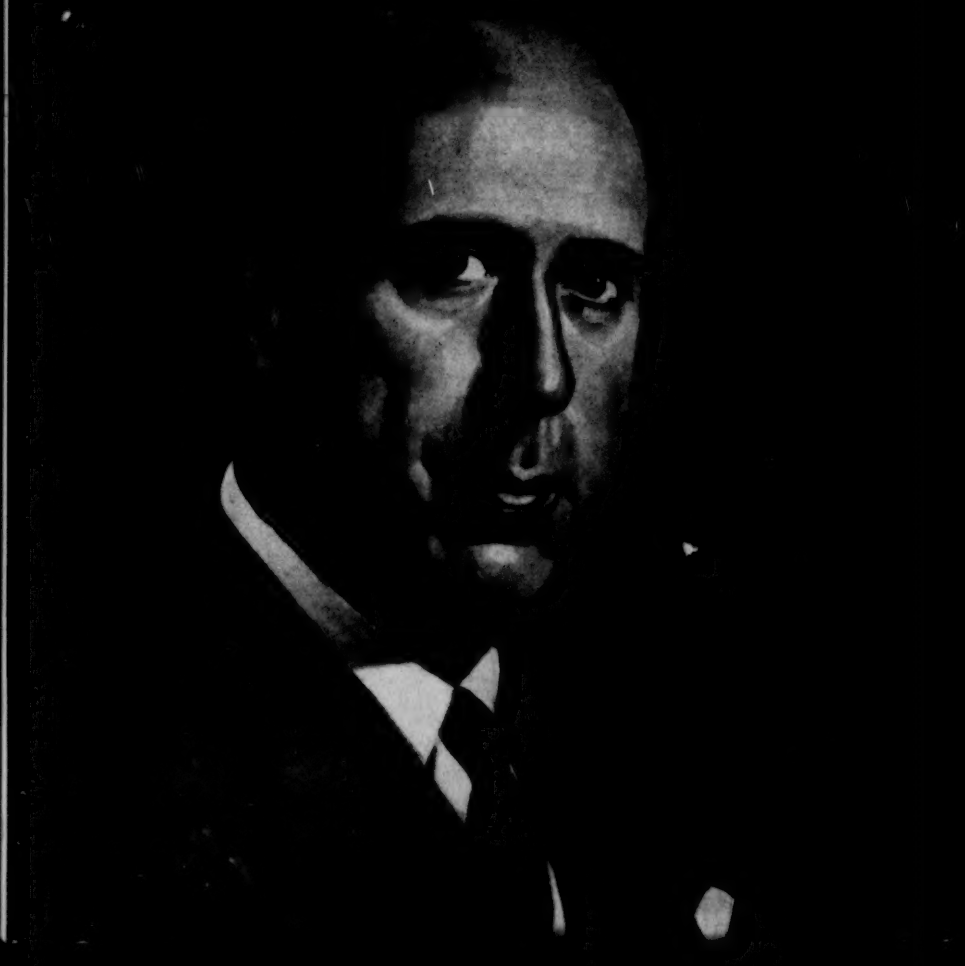
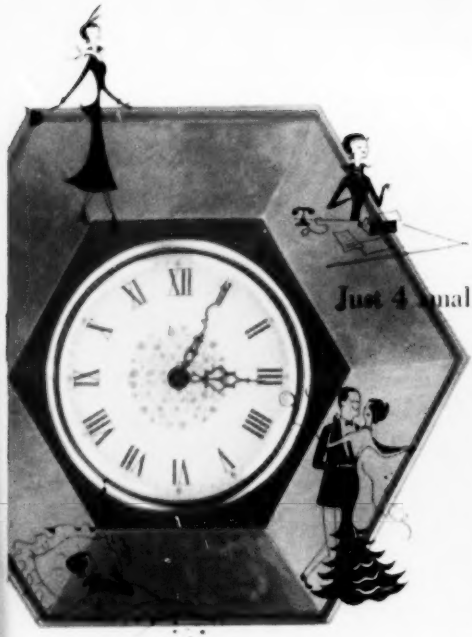
# MODERN MEDICINE





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1 "Symptoms were relieved from 4 to 24 hours after the administration of a single dose of Decapryn—" . . . Sheldon, J.M. Et al: Univ. Mich. Hosp. Bull. 14:13-15 (1948)

2 "It was found that 12.5 mg. could be given during the day with comparatively few side reactions and yet maintain good clinical results—" . . . MacQuiddy, P. L.: Neb. State M.J. 34:123 (1949)

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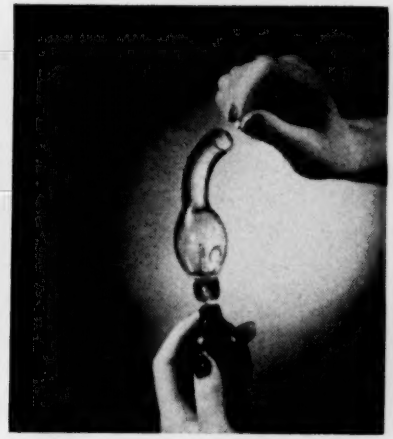

**by lung:** Potent penicillin G aerosol solutions can readily be prepared by dissolving PENALEV tablets in water or normal saline.

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**soluble tablets crystalline**

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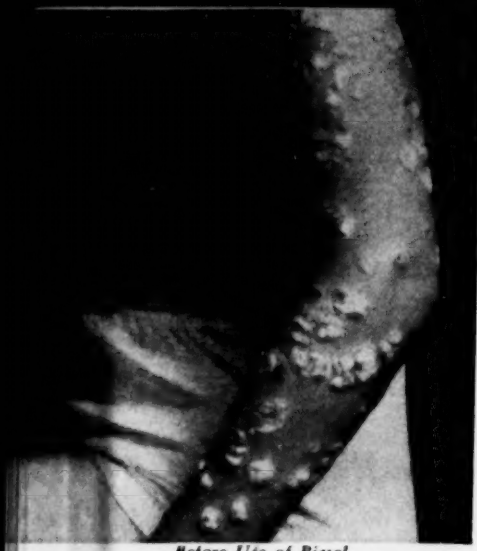
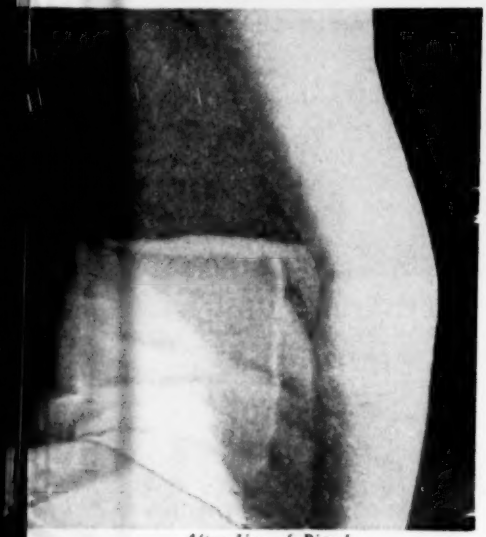
*Sharp & Dohme, Philadelphia 1, Pa.*



*Before Use of Riasol*



*After Use of Riasol*

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| theophylline | 2 gr. |
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# MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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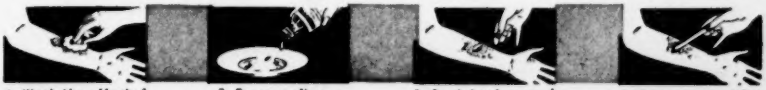

1. Wash the affected area with soap and water.
2. Pour some Neoxyn in a clean dish.
3. Swab freely on and around the affected area.
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*Lee Lehr, D. Federation Proc. 8:315 (1949)

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# TABLE *of* CONTENTS



*for*
*April 1*
*1951*


Modern Medicine
Vol 19, No. 7


THE MAN ON THE COVER is Dr. Irving S. Wright, physician and college professor. He is Professor of Clinical Medicine, Cornell University, New York City, a Colonel in the Medical Corps of the Army of the United States, Civilian Consultant to the Surgeon General of the Army, a member of the civilian advisory board to the Secretary of the Navy, and Chief Consultant in cardiovascular diseases to the Veterans Administration, New York State. Since 1935 he has been a director of the American Heart Association and a member of the editorial board of the *American Heart Journal*. He is author of numerous articles and books on cardiovascular diseases, his latest work being the Special Article, "Anticoagulant Therapy for Thromboembolic Disease" on page 55.

# *Contents for April 1 1951*

CONTINUED

# In TRICHOMONIASIS the new ARGYPULVIS TECHNIQUE means better control

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# *Contents for April 1 1951*

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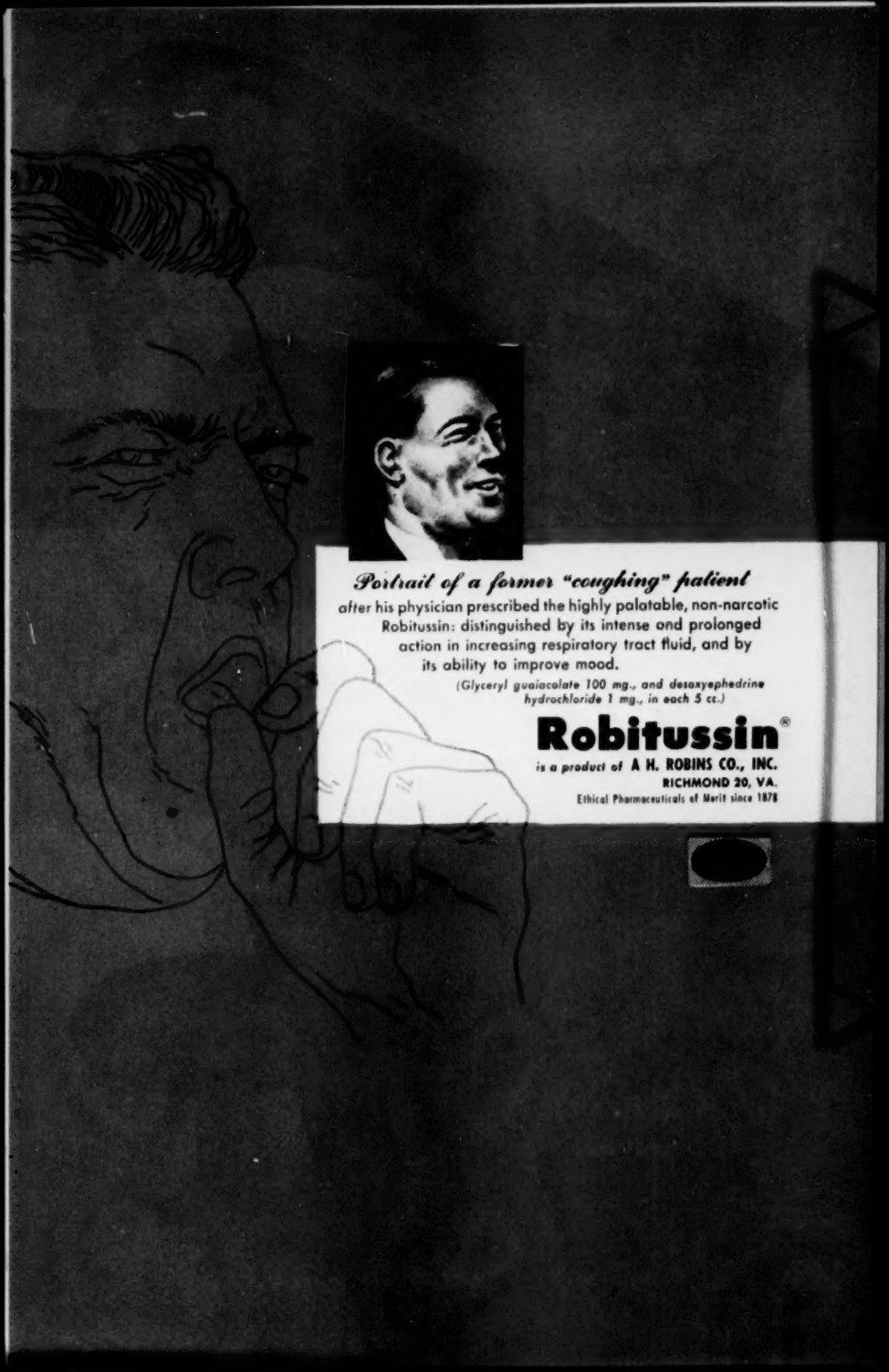
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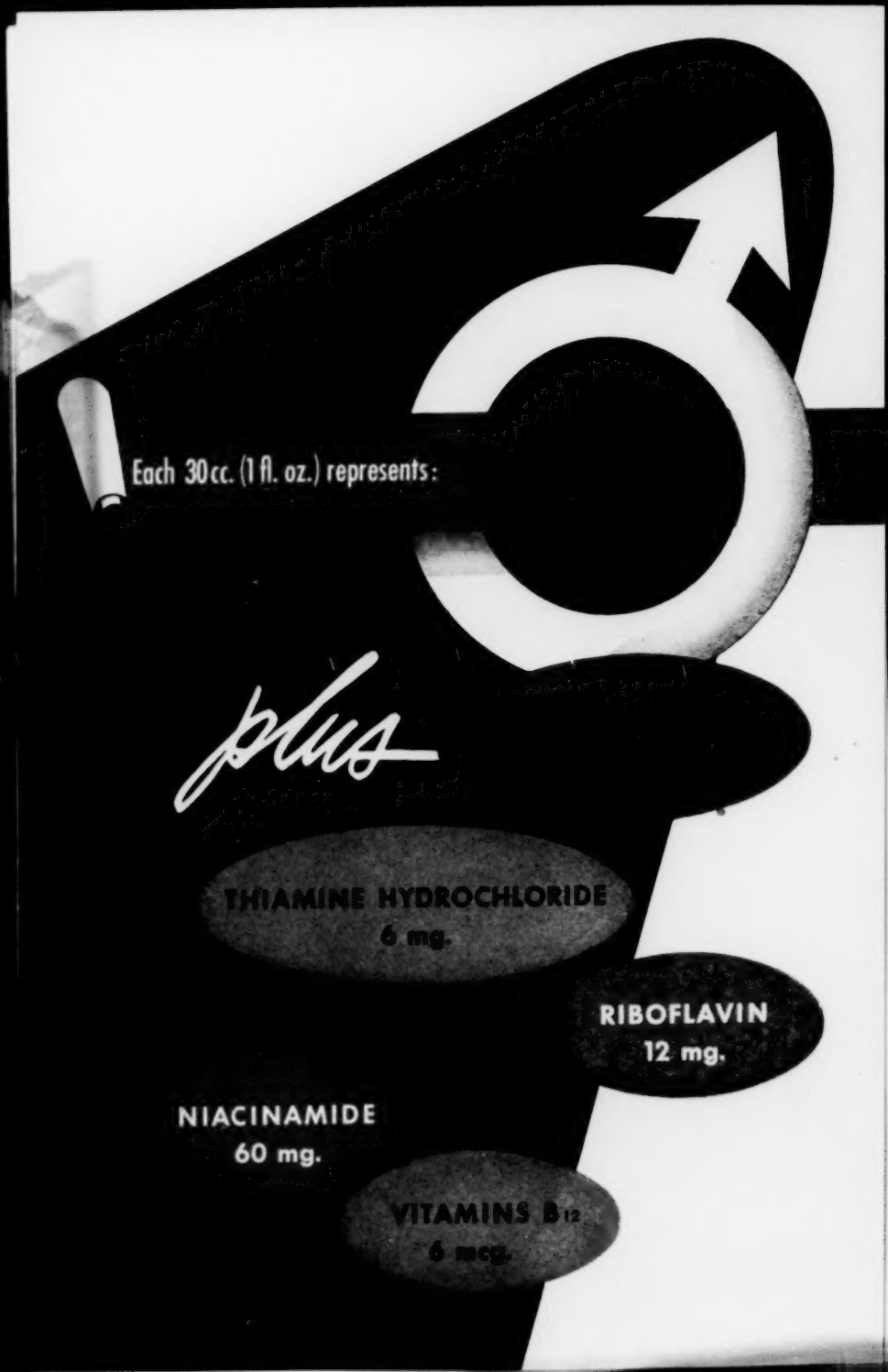
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# LETTER FROM THE EDITOR

***Dear Reader:***

Thrombotic episodes are responsible for more deaths among persons past the age of 50 than any other single disorder. Coronary thrombosis alone is fatal to about 200,000 persons in the United States annually.

Not all these patients need to die. Anticoagulant therapy can save many. The Special Article, "Anticoagulant Therapy for Thromboembolic Disease" by Dr. Irving S. Wright, on page 55 tells how and why. We earnestly hope that you read it.

The basic scientific and clinical work on anticoagulant therapy was completed some years ago, but only recently has knowledge of how to interrupt coagulation become available. Progress in the work has been reported from time to time in *Modern Medicine*. Dr. Wright brings all this material into focus in his article.


The problem, recently stated by Dr. Shepard Shapiro, Assistant Professor of Clinical Medicine at New York University, is to make all physicians aware of thrombotic complications, so that they will recognize the conditions in the initial stages, and to provide reliable laboratory control of the therapy so that the treatment can be administered with the least hazard of hemorrhage.

We believe that Dr. Wright's paper is a major contribution toward the solution of this problem.

Dr. Wright's discussion is the second of a series of three articles on drug therapy. The first, by Dr. William G. Lennox, "Control of Seizures by Drugs," appeared last month. The final article of the series, "The Antihistaminic Drugs," by Dr. Morris Fishbein, will be published in the June 1 issue.

EDITOR


Nearly every convalescence is influenced by the minor mental and emotional disturbances that form such a troublesome part of the total clinical picture. Too often "chronic worry" stands stubbornly in the way of the patient's full recovery.

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# *Correspondence*

*Communications from the readers of* MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

## Britain Still Has a King

TO THE EDITORS: Under the ocean liner on page 130 of the February 1, 1951 issue of *Modern Medicine* it

*"I need a very expensive operation so I'm going to England and become a British citizen."*

states: " . . . and become a British citizen."

Britain still has a king, and therefore no citizens, but subjects. Citizens are found in a republic.

I enjoy your publication very much and get much information from it. You all deserve the highest praise for your effort.

H. SCHROEDER, M.D.

San Francisco

## Bastard Term and Misnomer

TO THE EDITORS: Though a "dyed in the wool" specialist, I religiously browse in your *Modern Medicine* from cover to cover every fortnight.

In your issue of Feb. 1, 1951, I found on page 83 the term "neuropsychiatry." May I take the liberty, with regard to the use of this term, to draw your attention to a letter of mine published in the *J.A.M.A.* 137:401, 1948:

The term neuropsychiatry has recently come into vogue, especially among the military. This term is unfortunate, since this word—though listed in Webster—is a bastard and a misnomer.

Similar words in common usage, such as neurosurgery, neurophysiology and neuroanatomy, naturally lead to the assumption that "neuro" in neuropsychiatry stands for neurologic. But this is not the case. There is no such thing as neurologic psychiatry. Neither can "neuro" stand for nerve or neuron—as in neuromuscular.

"Neuro" is apparently supposed to be an abbreviation of neurology. If so, the term neuropsychiatry is awkward because the endings of the two words are not the same. One rightly abbreviates otology, rhinology and laryngology to otorhinolaryngology, since in this case all endings are the same. If neuropsychiatry is intended to mean an abbreviation of neurology and psychiatry, both of these two words should be used. Each of these disciplines is so large that each deserves to be called by its own full name.

One does not say "gyneco-obstetrics," but gynecology and obstetrics. One does not say "ophthalmosurgery" when one means ophthalmology and surgery.

A laudable effort to do away with the term "neuropsychiatry" was made at the meeting of the Section on Neuropsychiatry of the California State Medical Association in April, 1948. A resolution was adopted to suggest to the

council that the name of the section be changed from neuropsychiatry to neurology and psychiatry.

A further innovation worthy of imitation has been made in this section under the able chairmanship of Dr. Robert B. Aird of San Francisco. In 1948 the section on neuropsychiatry had two separate sessions, held on separate days: one a psychiatric session, the other a neurology session. This is a better arrangement by far than a program of intermingled papers on neurologic and psychiatric subjects.

The interests of neurologists and psychiatrists are drifting too far apart to make a constant mixed program appealing to both.

The ideal solution for medical societies, of course, would be the establishment of a separate section on neurology and neurosurgery on one side, and a section on psychiatry on the other. But, for the time being, this idea must remain only the pious wish of some neurologists and neurosurgeons.

I also suggest that you peruse the *Transactions of the American Neurological Association*, vol. 75, 1950, recently published. There on page 247 the article of Dr. Pearce Bailey, "Should the Term Neuropsychiatry Be Scrapped?" might be of considerable interest to you.

I hope and pray that you will be through with this term for good when you have read this.

R. WARTENBERG, M.D.

San Francisco

## For Spare Minutes

TO THE EDITORS: I wish to express my gratitude for receiving your excellent publication. There is not a publication of medicine that provides so much in such concise and comprehensive style. For that odd ten or fifteen minutes, it's *Modern Medicine* for me every time.

WINTHROP D. HALL, M.D.

Dearborn, Mich.

# *Medical Films*

THE month of April has been set aside by Congress for the National Cancer Campaign. Interest is focused not on fund-raising alone, but on an educational program as well. Films available for showing to professional audiences are listed below. These titles may be obtained by writing to your state division of the American Cancer Society.

CANCER: THE PROBLEM OF EARLY DIAGNOSIS—16 mm., sound, color, 30 minutes.

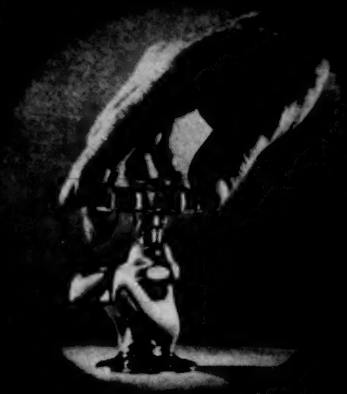
First in a new series of films, this is designed to show that the family physician offers the only immediate hope of reducing the toll of cancer. It is an unusual medical film. It emphasizes highlights, skips unessential details. Family physicians are shown making examinations and surgeons performing operations. Animation is used to portray what is happening inside the body of the cancer patient. A series of charts dramatizes the reduced mortality rate when diagnosis and treatment are early instead of late. The 5 succeeding films will give more detailed information on cancer in specific sites. The series is sponsored jointly by the American Cancer Society and the National Cancer Institute, U.S. Public Health Service.

BREAST CANCER: THE PROBLEM OF EARLY DIAGNOSIS—16 mm., sound, color, 34 minutes.

This is the second of the series described above. Its purpose is to show the physician how to reduce mortality from the most common type of cancer among women. In animation and clinical photography, the film offers excellent shots of breast examination technics.

WHAT IS CANCER?—16 mm., sound, color, 25 minutes.

This is the first in a film series for nurses. It deals with the over-all problem of cancer, its biologic, statistical, and therapeutic aspects.



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## THERAPEUTICALLY

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## PREOPERATIVELY

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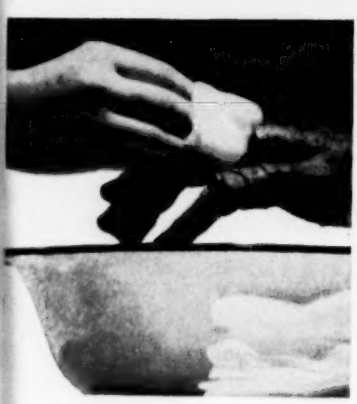

- **WETTING**—Readily envelops dirt, grease, oil, epithelial and tissue debris, aiding the painless removal of irritant foreign materials from the wound site when gently rinsed with copious amounts of warm water.
- **CLEANSING**—Acidolate cleanses with less pain. High wetting power gives efficient, deep penetration of wounded area, frequently eliminating the added trauma usually necessary in cleansing of lacerations and extensive wounds.
- **LIQUID EMULSIFIER**—Fat-soluble and water-soluble contaminants are effectively loosened and removed without chemical damage to the skin area.

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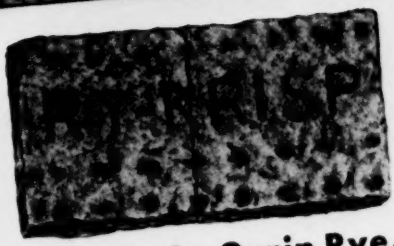

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# *Washington Letter*

## Problem of U. S. Aid to Medical Schools to the Fore Again

The question of whether the federal government should come to the help of medical schools, long and bitterly debated in and out of Congress, again is up for decision. Paradoxically, emergency conditions are providing new arguments for both sides.

Demands by the military services, Red Cross, Civil Defense Administration, and U.S. Public Health Service make crystal clear the fact that more physicians, dentists, and nurses could be put to good use immediately—if we had them.

But at the same time, "things are tough everywhere" on the manpower front. Spokesmen have indicated that the Defense Department doesn't want to defer from military service a single student who can't be assured completion of his professional education. Some senators—including one ardent advocate of federal aid to medical schools—want to defer just enough men to fill our medical schools to their present capacity, "not their capacity four, five, or six years from now." The suggestion seems to be, "yes, we need more doctors, but not bad enough to defer any more medical students."


A compromise may somehow be reached by proponents of federal aid legislation and the manpower planners. But at this stage, the gulf between the two groups of planners appears wide and deep.

That, in general, was the situation as Congress settled down to the work of passing a new draft bill, which can't be delayed for many weeks, and of deciding what to do about the medical schools, a problem which many here consider just as serious in a sense as the draft problem.

For years Congress has


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wrestled over various proposals for aid to medical education. In the last Congress, the Senate passed such a bill. The House Interstate and Foreign Commerce Committee patched and revised several bills, but in the end no legislation reached the House floor. The American Dental Association and a large number of medical schools and medical deans, individually and collectively, worked for this legislation, which was just as vigorously opposed by another group of professional associations, spearheaded by the American Medical Association.

This session Sen. James E. Murray (D., Mont.) took over as chairman of the Senate Labor and Welfare Committee. He announced immediately that his committee would make a unanimously favorable report on S. 337, his aid to medical education bill. This was accomplished in the first month of the session—a unanimous, bipartisan report.

Incorporated in the bill was the proposal of Rep. Frances Bolton (R., Ohio) for a broad program of financial help to nursing students and nursing schools, those for practical nurses as well as for degree nurses. On its own merits, Mrs. Bolton's bill had attracted important public and congressional support. This support, of course, lined up behind Sen. Murray's omnibus bill.

Despite these maneuverings, the aid to medical, dental, and nursing education has no assurance of success in the House. Rep. Robert Crosser (D., Ohio), chairman of the House Interstate and Foreign Commerce Committee, may approve the bill, but probably without the ardor of Sen. Murray. Furthermore, the House Rules Committee, now restored to much of its old power, may be ex-

**annealed**

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**MACGREGOR INSTRUMENT COMPANY, NEEDHAM 92, MASS.**

pected to study, restudy, review, and re-review any domestic spending bill that is not absolutely essential for defense.

But far more of a practical obstacle than the Rules Committee is the Defense Department's attitude on deferments. The department has indicated that it would be willing to defer 75,000 men a year for three years for all phases of higher education, plus an unspecified number to attend college as ROTC and NROTC members. To maintain present enrollment, a high percentage of these would have to be tagged for medical, dental, and veterinary schools. When other professions stake out their claims, many believe that the medical schools will be fortunate to have enough students to match their present capacity.

Advocates of United States aid to medical education will argue convincingly that we'll have to start now to increase capacity of medical schools—and these proponents may carry the day. But the AMA and others who oppose the bill will certainly use the deferment situation as one more argument for not embarking at this time on a program that they consider inadvisable at anytime.

*"This is the only way we can put him to sleep."*

## Washington Notes

**New legislation** which the Special House Committee on Chemicals in Foods will recommend is pretty well outlined in the committee report, which states, "Most witnesses testified strongly that a chemical or synthetic should not be permitted to be used in the production, processing, preparation, or packaging of food products until its safety for such use has been established, and . . . the food chapter of the Federal Food, Drug and Cosmetic Act should be amended to include a section generally similar to the New Drug Section of that act." The committee will hold more hearings this session.

**Some 40%** of the registered nurses in America are not working at their profession, according to the American Nurses' Association. The association, with the AMA and the Army, is attempting to get some of these retired nurses, 87% of whom are married, to return to practice, thereby making possible release of younger women for military duty.

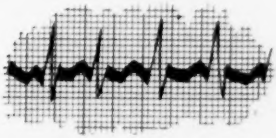
**Letters from physicians** will make up one of the exhibits of the Senate subcommittee investigating the VA medical department. The chairman,

(Continued on page 34)

*Effective against many bacterial and rickettsial infections, as well as certain protozoal and large viral diseases.*

# AUREOMYCIN

*Hydrochloride Crystalline*



The Internist today is less concerned than in former years over cases of pneumonia. Once highly fatal, this disease has been all but conquered by modern chemotherapy. For many pneumonias—bacterial, rickettsial or viral—aureomycin is often a preferred drug.

*Packages*

*Capsules:* Bottles of 25 and 100, 50 mg. each capsule. Bottles of 16 and 100, 250 mg. each capsule. *Ophthalmic:* Vials of 25 mg. with dropper; solution prepared by adding 5 cc. of distilled water.

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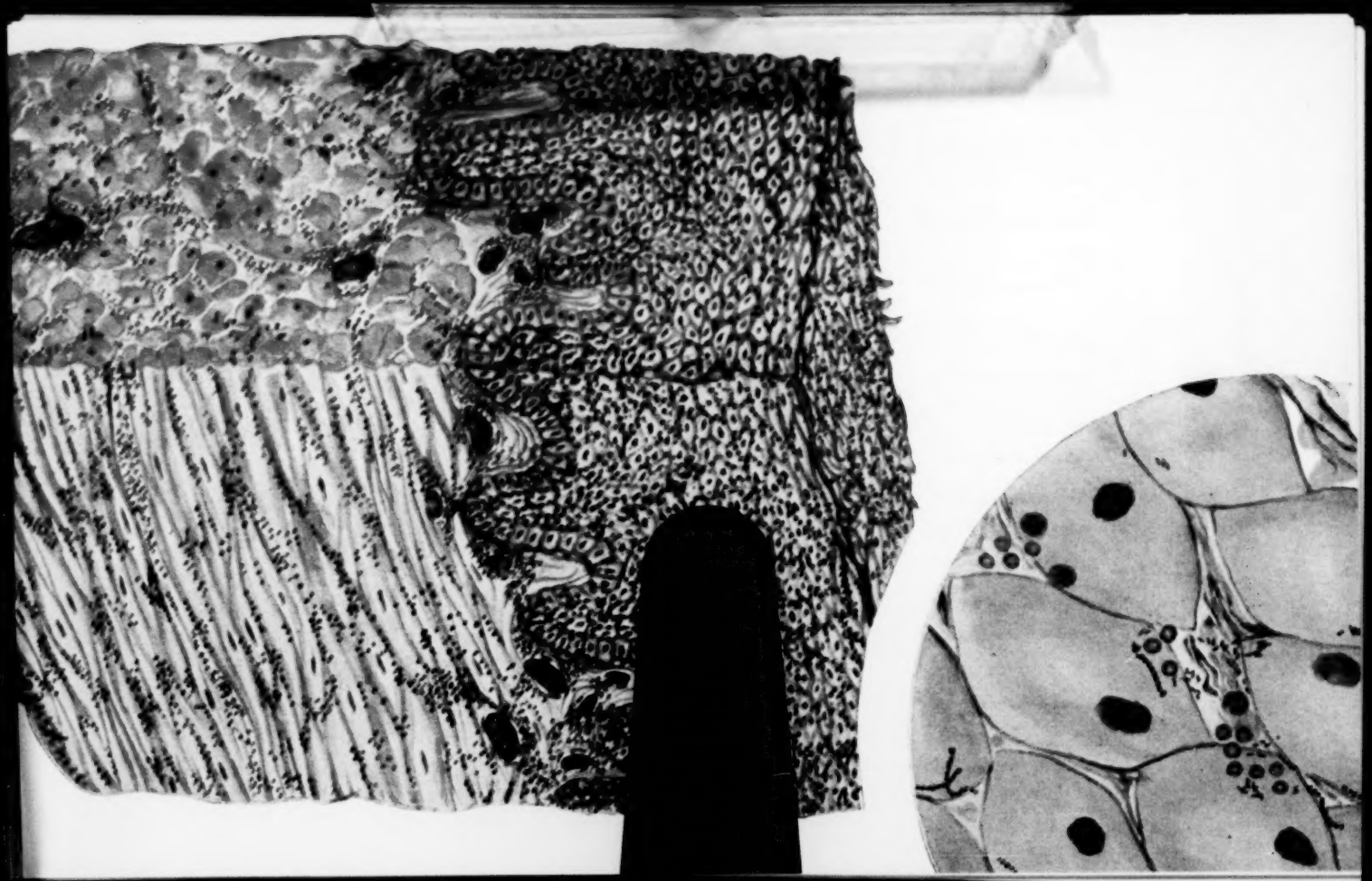

*"In the presence of infection in the vagina there is a decrease in the height of the vaginal mucosa.*

*"...there is a lowering of glycogen content of the mucosal cells.*

*"...there is partial or total replacement of Döderlein bacilli by other organisms.*

*"...the pH approaches neutrality or alkalinity."*

Kuder, K.: Vaginal Infections,
J. Am. M. Women's A. 5:173
(May) 1950.

# floraquin®

—stimulates renewal of the normal thickness of the vaginal epithelium, aids in replenishing the normal glycogen content of the mucosal cells. It is an effective trichomonacide, combats pathogenic organisms and restores a vaginal pH of approximately 4.0, which is favorable to the regrowth of the normal protective flora.

**Floraquin combines the potent trichomonacide and fungicide, Diodoquin-Searle (diiodohydroxyquinoline), with lactose, dextrose and boric acid.**

**SEARLE** / *RESEARCH IN THE SERVICE OF MEDICINE*

Hubert Humphrey (D., Minn.), says, "All express a fear that there may be some change planned in the department," following ouster of Dr. Paul Magnuson as chief.

**Fear by Red Cross** that its blood collection program might slump prompted the National Research Council to issue a warning statement. The council, sponsor of research in plasma substitutes, pointed out in detail the reasons why such substances as dextran and Periston are not substitutes for whole blood. The council said it would continue to sponsor research on these substances, and to advise the Defense Department to stockpile them, but that whole blood would be needed in increasing quantities.

**Some persons** close to the Red Cross are concerned that the medical phases of its programs may get out of professional hands. They are not protesting now but are watching developments carefully. The issue originally arose in an administrative reshuffling of Red Cross, which demoted the chief medical officer from a vice-presidency to the medical directorship. At the same time the blood program committee—five prominent doctors who set policy and procedures for the blood collection campaign—was ordered to report not to the Red Cross president, as in the past, but to the executive vice-president.

**Rep. Chet Holifield,** California, Democrat and ardent supporter of the administration, surprised observers here by introducing a bill to limit the President's powers for emergency reorganization. It was identical with a bill passed by the Senate and was principally aimed at blocking the elevation of FSA Adminis-

## *CHLORAL HYDRATE CAPSULES-FELLOWS*

*for the patient*

*who needs daytime sedation and relaxation*

*Chloral Hydrate Capsules-Fellows (3¾ gr.) 0.25 Gm.*

*gives complete comfort without*

*physiological depression.*

ODORLESS, TASTELESS, RAPIDLY EFFECTIVE

DOSAGE: Daytime Sedation: One (1) capsule three (3) times a day after meals.

Physiological Sleep is produced when two (2) to four (4) capsules are administered at bedtime.

"PHYSIOLOGICAL" SLEEP: Usually lasting from five to eight hours. Pulse and respiration are slowed in the same manner as in normal sleep. Reflexes are not abolished and the patient can be readily aroused.

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PROFESSIONAL SAMPLES AND LITERATURE ON REQUEST.

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*pharmaceuticals since 1866*

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Rehfuss, M.R. et al: A Course in Practical Therapeutics (1948)
Goodman, L. & Gilman, A.: The Pharmacological Basis of Therapeutics (1941)
Sollman, T.A.: A Manual of Pharmacology, 7th Ed. (1948) Useful Drugs, 14th Ed. (1947)

trator Oscar Ewing to the cabinet as an emergency move.

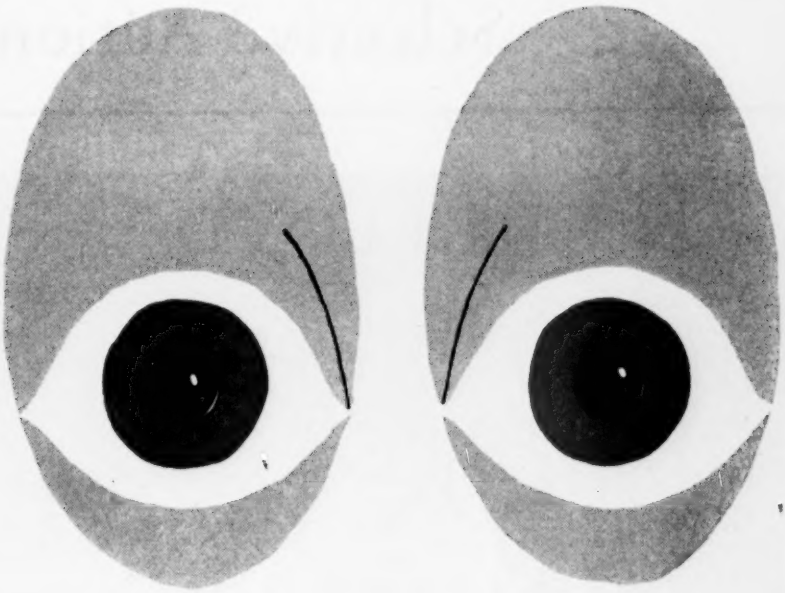
**Heroism** of Navy doctors and medical corpsmen in Korea is revealed in citations which released enough details of danger to fill an adventure book. One corpsman helped build a bridge across the Han so he could carry back 22 wounded marines. Another, treating wounded under fire, had a bandage shot out of his hand, then a canteen.

**The student deferment** clause of the doctor-draft bill was let drop almost without any effort to save it. It required deferment of premedical, predental, and preveterinarian students in numbers equal to present enrollment in such courses. Only one professional organization, American Dental Association, thought it should be kept. All others said that they thought it couldn't be administered and went along with the manpower bill's provision for grouping all college students in one deferment pool.

**The yes-and-no** feeling on federal aid to medical education is indicated by Rep. E. M. Burnside (D., W. Va.). He introduced a bill for federal help in financing construction and facilities for medical schools, after making every possible effort to line up support in advance. But one week later Mr. Burnside came through with another bill which said, in effect, let's wait a year. The second proposal would authorize formation of a bipartisan commission, half government and half private, to look into the problem. The commission would make a report by next January on the emergency problems, and a year later on the long-range problems.

Dr. **Raymond Kaiser** is new chief of the Control Branch of National Cancer Institute, in charge of distribution of millions to states to stimulate cancer control work. Another appointee to be heard from often in the future is Dwayne Orton, who will direct the mass education and instruction program just getting underway at Federal Civil Defense Administration. The CD staff and regional schools will come under him, also the scheme for wholesale dissemination—pamphlets and movies—of all essential information on civil defense.

**Defense Department's** proposed plan for rehabilitating 4-F's for military service disappeared without a trace in a Senate committee. The AMA and several other organizations objected to the idea and pointed out that FSA now has adequate authority to rehabilitate indigents without cost to them, and that existing public and private agencies can handle any others who want to be rehabilitated so that they can serve. Chairman Lyndon Johnson (D., Texas) noted that the Defense Department hadn't bothered to explain or defend the proposal, and the chairman had it dropped from the bill.



when your patient sees it daily . . . his "tonic" becomes an ever-present symbol of the reassuring and comforting fact that he is "in the care of his physician". Physicians know that, in addition to its tone-restoring and appetite-stimulating effects, this psychological aspect of a good tonic can often produce striking results. NEURO PHOSPHATES and THERANATES are both available in 12 fl. oz. bottles.

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# Eskay's Neuro Phosphates*

***a palatable and effective tonic***

# Eskay's Theranates*

***the formula of famous Neuro Phosphates, plus Vitamin $B_1$***

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## KHELLOYD

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*Long-acting Coronary Vasodilator*

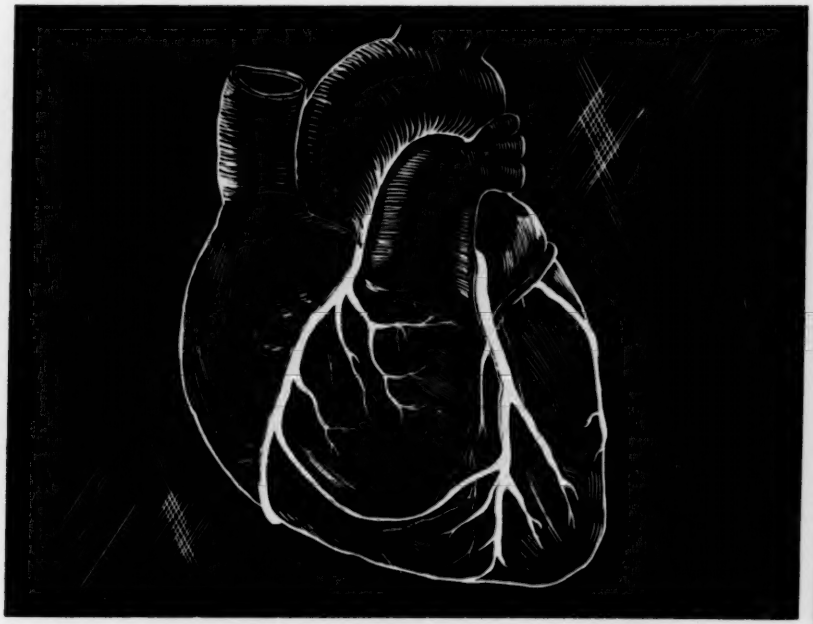
Angina prevention and control can be accomplished in a large percentage of cases by the coronary vasodilator action of KHELLOYD.

The action is selective—blood flow through the coronary vessels is increased without affecting the blood pressure or heart rate.

KHELLOYD is highly purified khellin, which has a pharmacologically as well as clinically established action. In the angina syndrome, it lessens both the severity and the frequency of attacks.

DOSAGE: The usual adult dose is 1 tablet (50 mg.) 3 or 4 times daily after meals until favorable results are obtained. Dosage should then be reduced to a maintenance level—1 to 3 tablets daily. During acute episodes, single doses as high as 200 mg. may be given.

# on the Coronaries . . .



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KHELLOYD is supplied in bottles of 50, 250 and 1000 tablets, each containing 50 mg. of purified khellin (visammin).

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*More than half a century of service to the medical profession*

# *Forensic Medicine*

ARTHUR L. H. STREET, LL.B.

*Prepared especially for Modern Medicine*

**PROBLEM: Was a church hospital association liable to a *paying* patient for injury caused by negligence of nurses?**

**COURT'S ANSWER: Yes.**

The Iowa Supreme Court reversed the position it had taken in two previous decisions, one rendered in 1918 and one in 1941, in cases involving the same question. The court cited decisions of courts in other states indicating a strong trend toward abrogating the rule of nonliability of charitable hospitals to paying patients (45 N.W. 2d 151).

**PROBLEMS: [1] Is a physician or surgeon bound to use as much care and skill in treating a patient gratuitously as for a fee? [2] Except as made so by statute, is a hospital liable for neglect of a doctor in treating a patient? [3] The New York Welfare Law makes municipalities liable for malpractice of doctors in "gratuitously" serving patients in municipal hospitals. Does the statute apply to regularly paid staff members?**

**COURT'S ANSWERS: [1] Yes. [2] No. [3] No.**

The New York Supreme Court, Appellate Division, First Department, said that the word "gratuitously" refers to whether the doctor is working for nothing or not, and not to whether the patient was to recompense the hospital. So, the City of New York was not held liable to a patient for alleged neglect by paid staff members of the hospital in which the patient received treatment.

The court said that the purpose of the statute is to encourage doctors to donate services to patients in public institutions, by indemnifying them against malpractice claims. "Eminent physicians, whose services are offered without thought of compensation, are constantly exposed to the hazard of action against them for real or fancied malpractice." The statute permits the patient to sue the municipality directly, thereby avoiding two suits, one by the patient against the doctor and another by the doctor against the municipality for reimbursement (100 N.Y. Supp. 2d 860).

**PROBLEM: An 8-year-old public school pupil was injured, allegedly through the school district's negligence. His mother, apparently a widow, was unable to pay medical and hospital bills incurred because of the injuries. In suing for damages on his behalf, could she include the amount of the bills?**

**COURT'S ANSWER: Yes.**

The New York Supreme Court, Chenango County, decided:

Ordinarily, a parent, who is primarily liable for such expenses, can compel reimbursement by a person

who has negligently injured a minor child.

In such cases, the minor could not legally obligate himself to pay the bills and therefore is unable to claim the amount as part of his damages. But this assumes that the parent is able to pay.

Inability of the parent to pay brought the case within the rule of law recognized throughout the country: "Medicines and medical attendance furnished to an infant" [legal term for minor] "when his health or physical condition requires them ordinarily constitute necessaries for which he may render himself liable . . . although the infant lives with his parent, where it appears that the parent is unable to, or at least does not, provide for the infant" (101 N.Y. Supp. 2d 128).

**PROBLEM: A doctor agreed to treat, on behalf of an insurance company, all injured workers of a manufacturing company which was insured against liability. The doctor was required to furnish a nurse, instruments, and all facilities. The contract required him to furnish "full treatment until the injured employee is able to return to work." The doctor's compensation was fixed at 17½% of the insurance premiums paid by the manufacturing company. The contract was terminated at the end of two years. Was the insurance company liable to the doctor for the reasonable value of services rendered after the contract terminated, in completing treatment of employee injured before the contract expired?**

**COURT'S ANSWER: No.**

The Alabama Supreme Court said that the contract clearly required the doctor to attend employees, injured during the life of the contract, until their return to work, and that, having received his percentage pay while the contract was in force, he had no further claim. The decision was influenced by the fact that the insurance company told him that it would not pay any additional compensation for the services in question when he inquired about the matter on termination of the contract (99 So. 851).

**PROBLEM: Can one indicted and tried for attempt to procure an abortion be convicted on proof that the abortion was procured?**

**COURT'S ANSWER: No.**

In making the decision, the Illinois Supreme Court cited its earlier decision that a conviction for murder by abortion was not supported by proof that a woman died from blood poisoning induced by an attempt to procure an abortion. The court treats attempt to abort and consummation of abortion as distinct offenses (95 N.E. 2d 861).

**PROBLEM: Could one accused of criminal abortion complain of use of evidence secured on search of premises on the ground that the search was made without a warrant, when there was no proof that accused owned or was in possession of the premises searched?**

**COURT'S ANSWER: No.**

In the same case, the Texas Court of Criminal Appeals decided that an arrest for the offense may be made without a warrant for arrest, if committed within the view of concealed arresting officers (232 S.W. 2d 736).

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promotes healthy granulation, rapid epithelial repair; retards scar tissue formation; is particularly helpful in slow-healing, indolent wounds; pleasantly fragrant.

SUPPLIED IN 1½-OZ. TUBES AND IN 8-OZ. AND 16-OZ. JARS

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# For Soothing Sustained Mild Sedation . . .


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| Sedation may be: | | |
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| SOOTHING<br>SUSTAINED<br>MILD | **OR** | QUICK<br>TRANSIENT<br>PROFOUND |

ORGAPHEN sedation sets in gradually, is soothing, *mild* and particularly well suited for *prolonged* action, especially in hypertensive and older patients, and for the patient "on edge," requiring continuous treatment.

**Less Phenobarbital Necessary**

ORGAPHEN includes only 12 mg. (1/5 grain) of phenobarbital in each 4-cc. teaspoonful while the standard elixir of phenobarbital contains ¼ grain. Yet, "One of the most striking observations noted was a definite clinical synergism of the phenobarbital sedation" by

the organically bound iodine, apparently "equivalent in effect to about twice (24 mg.) the amount of phenobarbital alone." Thus adequate sedation with ORGAPHEN is obtained with relatively little phenobarbital.

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A recent study by Slaughter, Grover, and Hawkins*—indicates that ORGAPHEN is a unique elixir of organically bound iodine and phenobarbital, has a particularly salutary effect on symptoms associated with hypertension, and exerts a distinct hypotensive action as well. Toxic effects are negligible. The authors note that maximal results appear to be obtained after about two months continuous use of ORGAPHEN, and they add that, "it has been extremely difficult to withdraw any of these patients because they obtained such excellent relief from the preparation."

*Report to American Therapeutic Society, Boston, 1950

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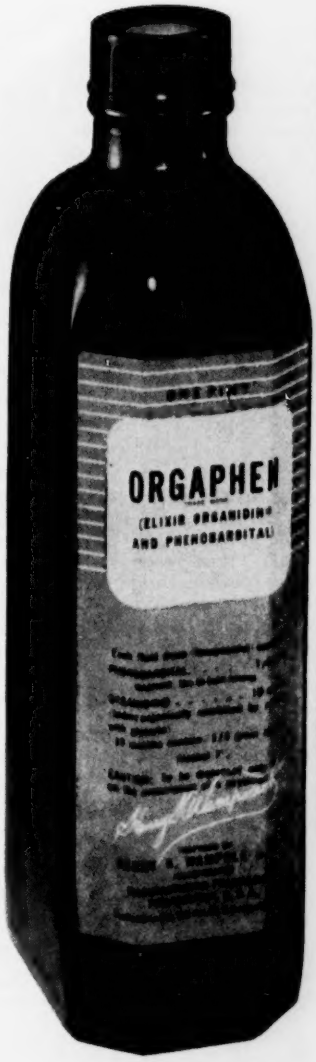


# *Questions & Answers*

*All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department,* MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

**QUESTION: A middle-aged Negro woman with Boeck's sarcoid has a greatly enlarged spleen which causes her some distress. Would splenectomy be justified?**

**M.D., Mississippi**

ANSWER: *By Consultant in Internal Medicine.* The spleen may be removed to relieve discomfort, but splenectomy will not affect the course of the disease. The size of the spleen may be diminished by roentgen irradiation.

**QUESTION: A seemingly healthy man of 39 had a partial pneumothorax in the left lung in September 1947, and in the right lung in December 1947. Three years later, he had a complete pneumothorax on the right side. No lung pathology exists. The man works as a refrigerator mechanic and claims that each of these episodes has occurred after he has worked with Fiber glass. In addition, he is exposed to Freon 12 gas. Could Fiber glass or Freon 12 gas be the cause of his trouble?**

**M.D., Washington**

ANSWER: *By Consultant in Tuberculosis.* Since no pulmonary disease has been found, your patient probably has spontaneous pneumothorax, formerly referred to as idiopathic pneumothorax. Apparently nearly all such incidents are caused by pleural blebs which rupture and permit air to escape from the lung into the pleural space. These blebs may be due to congenital weaknesses in parts of the pleura or to localized areas of emphysema and are not detectable by any method of examination, including roentgen inspection, during life.

Hundreds of cases of spontaneous pneumothorax, often bilateral, have been reported. No relationship has been established between physical activity and spontaneous pneumothorax, since the condition may occur during strenuous physical work or sound sleep.

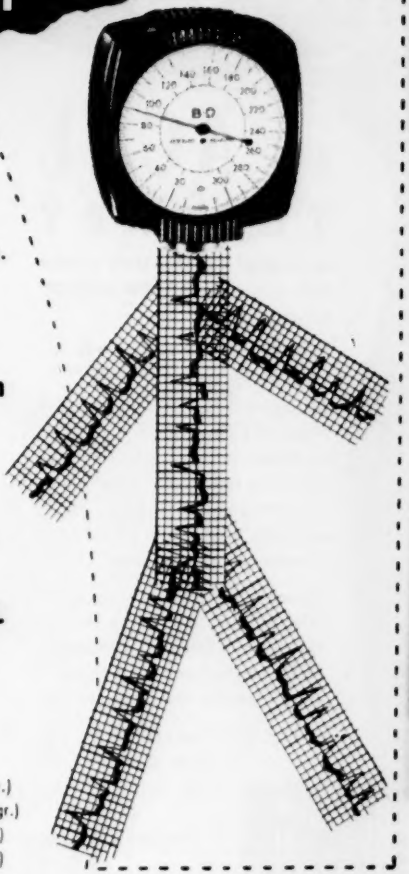
No evidence has been collected to prove that working with Fiber glass or Freon 12 gas causes spontaneous pneumothorax.

**QUESTION: Is aluminum cookware harmful to use?**

**M.D., Kansas**

ANSWER: *By Consultant in Pharmacology.* The consensus, based upon unequivocal evidence, is that the use of aluminum cookware has no harmful effects. Somewhere, way back in the evolutionary process, the animal organism discarded aluminum. The material is not absorbed from the gastrointestinal tract and is not found in the tissues.

# PERTENAL® improves the whole patient in hypertension




***controls pressure and symptoms that send pressure soaring***

**more normal pressure** around the clock with two potent vasodilators.

**eases stress on heart** by decreasing peripheral resistance.

**relieves gastro-intestinal spasm** pain and other discomforts which aggravate pressure.

**relaxes patient** mentally and physically; allays tension, worry, restlessness, insomnia.

**from the first day** of **PERTENAL** therapy the whole patient is more comfortable, happier; able to live a more normal, perhaps longer life.

Each PERTENAL tablet contains:

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| VERATRUM VIRIDE | 100 mg. (1½ gr.) |
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CROOKES LABORATORIES, INC. Crookes 305 EAST 45 ST., NEW YORK, N.Y.

**QUESTION:** What is the value of histamine therapy for headache of migraine type, and what would be the method of administration for a 26-year-old veteran who does not benefit from Cafergone and similar drugs?

**M.D., Massachusetts**

ANSWER: *By Consultant in Neurology.* The method of treatment with histamine for headaches which has been recommended as the most beneficial consists of the subcutaneous injection of histamine in the following schedule: 0.05 mg. twice daily for two days, then 0.066 mg. twice on the third day, 0.08 mg. twice on the fourth day, and, finally, 0.1 mg. twice daily for the following two or three weeks. In a number of cases this type of treatment works excellently. Other patients show little response.

In many cases the most important factor in treatment is complete readjustment of the individual and associated psychotherapy.

**QUESTION:** About ten months ago, the patient, a male 62 years old, had substernal pain while walking fast. The same symptom occurred again while mowing the lawn. The dyspnea is not excessive and occurs only on exertion. The man had a chancre forty years ago which was treated by a dozen injections of an unknown drug. His general health has been good until onset of the substernal pain. Fluoroscopic study shows the heart and aorta to be within normal limits. The Kline test is 2+, the Kolmer reaction weak. By limiting physical activity, the patient has reduced the number of anginal attacks, but has not eliminated them. The response to nitroglycerin is good. What would be the proper treatment?

**M.D., Pennsylvania**

ANSWER: *By Consultant in Internal Medicine.* The patient probably has syphilitic aortitis. In addition to

GROOVED TABLETS EASILY BROKEN

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CAN'T BE MISTAKEN FOR CANDY!


This special Children's Size Bayer Aspirin makes it easy for mothers to follow your prescribed dosage.

THIRTY 2½ GRAIN TABLETS 25¢


# CHILDREN'S SIZE

*Genuine* BAYER

# BAYER

ASPIRIN

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OF STERLING DRUG INC.

limitation of physical activity and use of nitroglycerin for anginal distress, antiluetic therapy should be considered. With incomplete information of the treatment already given, and consequently uncertain knowledge of the extent of fibrosis or scarring of the vessels, an edematous reaction to treatment should be assumed and avoided if possible. Injections of insoluble bismuth should be given weekly for eight or twelve weeks. The patient should then be in a hospital and penicillin administered. The dosage schedule may be 10,000 units of penicillin intramuscularly every three hours for three days. If no untoward reaction occurs, the dose may be increased to 50,000 units every three hours for one hundred twenty injections.

**QUESTION: A normal healthy boy of 9 who loves to eat suffers from constipation. The feces are round and hard. Mineral oil combinations, cascara, agar preparations, enemas, and methylcellulose have been used with little effect. Epsom salts is the only thing that gives him a good movement. The boy refuses to cooperate in trying to move his bowels. Could you make any suggestions?**

**M.D., New York**

ANSWER: *By Consultant in Pediatrics.* Assuming that intelligence is normal and the physical examination negative, the statement, "The boy refuses to cooperate," may be the crux of the situation. The parent-child relationship should be investigated. Perhaps tensions in the home may have resulted in this particular outward manifestation. If no lesion can be found by barium enema visualization of the colon a psychiatric approach is probably indicated.

*As a primary dietary supplement for the pregnant patient– there is nothing better than–*

# *White's* MOL-IRON®

## *with* CALCIUM and VITAMIN D

Mol-Iron—most effective iron therapy known,[1,2,3] now has been supplemented with the essential gestational elements, calcium and phosphorus, in an optimum ratio, plus adequate vitamin D.

The superiority of Mol-Iron as a source of iron is epitomized in the conclusions of Dieckmann:[1] "We have never had other iron salts so efficacious in pregnant patients."

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| Mol-Iron | 198 mg. |
| Dicalcium Phosphate (anhydrous) | 869 mg. |
| Vitamin $D_2$ | 200 units |

**Prophylactic Dose:** one capsule three times daily after meals.
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***Supplied:*** Soft gelatin capsules in bottles of 100.

**ALSO *Supplied:***
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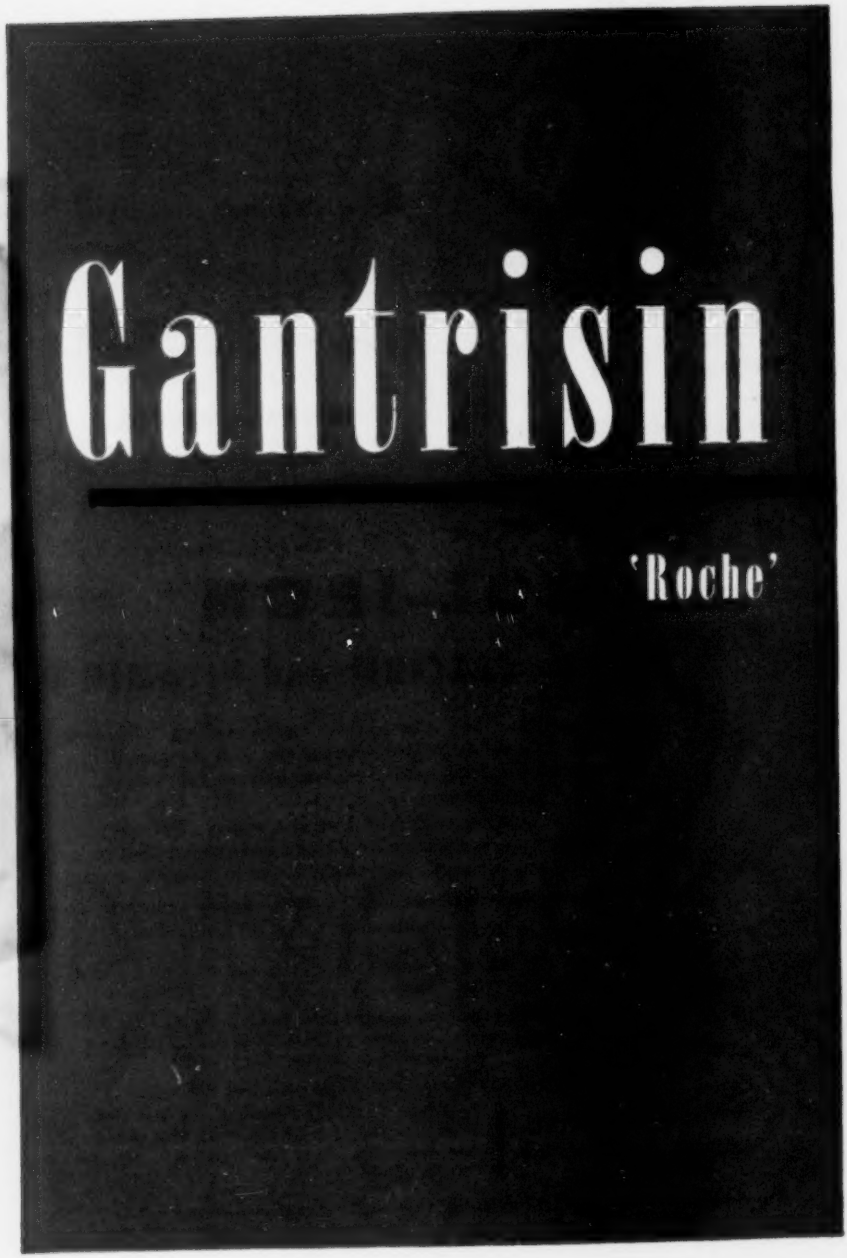
1. Dieckmann, W. J., and Priddle, H. D.: Am. J. Obstet & Gynec. *57*:541 (1949).
2. Chesley, R. F., and Annitto, J. E.: Bull. Margaret Hague Mat. Hosp. *1*:68 (1948).
3. Dieckmann, W. J. et al: Am. J. Obstet. & Gynec. *59*:442 (1950).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■ **greater solubility**

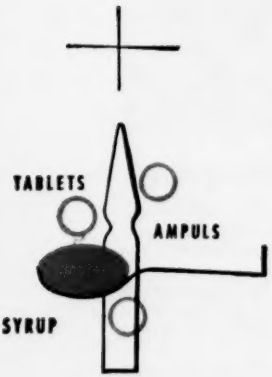
Gantrisin is a sulfonamide so soluble that there is no danger of renal blocking and no need for alkalinization.

■ **higher blood level**

Gantrisin not only produces a higher blood level but also provides a wider antibacterial spectrum.

■ **economy**

Gantrisin is far more economical than antibiotics and triple sulfonamides.




■ **less sensitization**

Gantrisin is a single drug—not a mixture of several sulfonamides—so that there is less likelihood of sensitization.

GANTRISIN®—brand of sulfisoxazole
(3,4-dimethyl-5-sulfanilamido-isoxazole)

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insoluble substance. Additional factors have been designated by Seegers as plasma Ac-globulin and serum Ac-globulin. Plasma Ac-globulin reacts with thrombin to produce serum Ac-globulin. This in turn accelerates the prothrombin plus thromboplastin plus calcium reaction to thrombin.

While this is undoubtedly an incomplete presentation, the chemical changes of blood clotting must be associated with morphologic changes resulting in an accumulation of the constituents of the blood to form an obstructive clot. In most cases, the accumulation of blood platelets occurs at the site of an injury to a blood vessel wall or secondary to an obstructive process. Such an obstruction may be on one of several bases, such as an arteriosclerotic plaque or external pressure secondary to a tumor or tight clothing.

The accumulated platelets become fused, and additional thromboplastin may then be released which encourages the production of more fibrin or the concentration of more fibrin locally. White corpuscles then begin to adhere to the mass of platelets and fibrin. White blood cells are usually caught first because they are of lighter specific gravity than the red blood cells and tend to travel along the margins of the blood stream in close proximity to the vessel walls.

When the blood stream becomes significantly obstructed by the white thrombus, the red blood cells begin to attach themselves. Thereafter, a thrombotic mass of red cells without a definite framework of platelets usually develops rapidly. This clot tends to propagate in the direction of the blood flow, although it sometimes forms in both directions. Slowing of the blood flow accelerates accumulation of the clot.

### Experimental Basis for Heparin Therapy

Early investigators found that heparin affected the clotting time of the blood. While the effect of a given dose varied fairly widely from one person to another, this factor did not prevent the use of heparin clinically.

Murray, Jaques, Perrett, and Best demonstrated that thrombi which ordinarily form on the intimal surface of the veins secondary to mechanical or chemical trauma can be averted by the injection of purified heparin before and for prolonged periods after the injury. Best, Cowan, and MacLean then showed that the formation of white thrombi in

chunks close to glass or cellophane can be obviated, delayed, or inhibited by heparin administration.

Solandt and Best devised a procedure whereby coronary thrombosis could be produced regularly in animals by isolating a coronary artery and injecting a solution of sodium ricinoleate into the vessel. When the animals were heparinized, thrombus formation was exceedingly rare, whereas a thrombus formed almost every time heparin was not used. Solandt, Nassim, and Best demonstrated that ligation of a large branch of the coronary artery and injection of sodium ricinoleate into the myocardium just beneath the endocardium usually resulted in a large mural thrombus, but that when heparin was used, this mural thrombus ordinarily failed to develop.

Recently, Laufman, Martin, and Tanturi have shown that with obstruction of the superior mesenteric or portal vein which almost invariably produces a sludge and, ultimately, a fixed clot, the presence of heparin in the blood prevents the sludge from developing into a fixed clot. H. P. Wright has demonstrated that the adhesiveness of blood platelets is diminished in vitro by the addition to blood samples of various anticoagulants including heparin.

### Experiments with Coumarin Derivatives

Some of the coumarin derivatives prolong the prothrombin time of blood plasma when administered orally to animals and man. These derivatives do not prolong the coagulation time of the whole blood to a comparable degree when the test is performed with glass tubes by the commonly used Lee-White method.

The clotting time is only one measure of the tendency of thrombosis to occur in the blood vessels. A. J. Quick has stated, "The determination of the coagulation time of the blood is among the most empirical procedures routinely employed in the clinical laboratory and is one most prone to be misinterpreted."

The Lee-White technic in glass tubes represents at best an extremely crude method for measuring blood coagulability and is readily recognized as an unsatisfactory index when one recalls that the coagulation time of whole blood is greatly prolonged in lusteroid or dri-filmed tubes. Moreover, when a

segment of vein is ligated at both ends without trauma, blood may remain therein without coagulating for a long time. The more nearly the inner surface of the testing tube resembles that of blood vessels, the longer the coagulation time. In dri-filmed tubes the coagulation time approximates the deviations in the prothrombin time much more closely than in glass tubes.

Dale and Jaques produced intravascular thrombi in dogs by crushing radial or saphenous veins on a linen thread by the method of Murray. They also produced extracorporeal thrombi in glass cells following the technic of Best, Cowan, and MacLean. In both experiments, when dicumarol was given, the incidence of thrombi formation was much reduced.

By the injection of ethanol amine oleate, Richards and Cortell produced thrombosis in the peripheral veins of dogs. When these animals were given dicumarol, the incidence and degree of thrombus formation were reduced. Bollman and Preston showed that glass cannulas in the carotid femoral arteries of dogs are usually completely occluded by thrombi within twenty minutes; when the animals are given dicumarol, the cannulas remain patent for six to eight hours.

Laufman and associates, repeating with dicumarol the experiments done with heparin, found the same effects. When an anticoagulant is not used, the sludge becomes fixed to the wall of the vessel within thirty minutes. If dicumarol is used, release of the obstruction after as long as one hour causes the sludged masses to move along immediately and break up. Clots do not adhere to the intima nor do thrombi form.

Numerous workers including Baronofsky and Quick, Spooner and Meyer, and H. P. Wright have shown that dicumarol, given orally, decreases the adhesiveness of the platelets. Blumgart and associates, Beattie and associates, and LeRoy and Nalefsky have studied the effect of dicumarol on experimental coronary occlusion to determine whether hemorrhage is increased at the site of the infarction or the healing process is retarded. Their studies show that such adverse effects do not occur from the use of dicumarol for this purpose.

### Therapeutic Use of Anticoagulants

An enormous volume of work from many institutions throughout this country and elsewhere has established without ques-

tion the value of anticoagulant therapy for thromboembolic diseases (Table 1).

In the treatment of each of the following conditions, the action of anticoagulants is primarily directed toward the prevention of [1] the propagation of thrombotic processes already present, [2] the development of new thrombotic processes in other parts of the vascular tree, and [3] embolization. Some evidence suggests that anticoagulants modify the natural evolution of thromboses already present, but whether this process results from direct action of the anticoagulant or from the fact that once development or propagation of the thrombus is interrupted, fibrinolytic enzymes in the blood assist in the resolution of the thrombi by lytic action is not known.

TABLE 1. ANTICOAGULANT USES

| *Indications for Therapeutic Use* |
|---|
| Pulmonary embolism secondary to intravascular clots |
| Venous thrombosis (thrombophlebitis or phlebothrombosis) |
| Sudden arterial occlusion due to thrombosis or embolism |
| Coronary occlusion with myocardial infarction |
| Rheumatic heart disease with auricular fibrillation and embolization |
| Congestive heart failure |
| *Indications for Prophylactic Use* |
| Traumatic injury to the blood vessels, to avoid thrombosis |
| Some postoperative and postpartum cases, especially in the presence of a previous history of thrombophlebitis or with pelvic or massive surgery |
| Vascular surgery |
| *Possible Indications for Use, about Which Final Conclusions Cannot yet Be Drawn* |
| Chronic obliterative vascular diseases |
| Gangrene of the extremities, to prevent local thrombosis and embolization |
| Frostbite |
| Retinal vein thrombosis |
| Cerebral thrombosis |

*Pulmonary embolism*—Immediate administration of rapidly acting anticoagulants is definitely indicated for patients with pulmonary embolism. Hemorrhage secondary to pulmonary embolism does not contraindicate anticoagulants but is, on the contrary, a strong reason for their use. Heparin should be given immediately, and dicumarol or Tromexan at the same time, so that the heparin may be discontinued when

the action of the coumarin derivative reaches a therapeutic level. This is the most important single method of attack for embolic phenomena.

When emboli are being released from a single set of veins in a leg, ligation may prevent the arrival of emboli in the lung from the particular veins ligated, but emboli may also arise from other veins throughout the body or from the proximal side of the ligation. We have seen several fatalities from such events. Moreover, the thrombophlebitic process may continue after the ligation. The fundamental process responsible for embolization is therefore not abolished by ligation, although ligation may at times be used as an adjunct to anticoagulant therapy or when such therapy is contraindicated.

Recently, amputation of the left auricular appendage has been recommended for patients with peripheral emboli arising from hearts in a state of auricular fibrillation. This, of course, would not affect the occurrence of pulmonary emboli from the right side of the heart or the leg veins. Our experience has shown that if a patient has more than 3 or 4 emboli, the chances are that he will have some from the right side of his circulation as well as from the left. Therefore, left auricular appendectomy appears to be of greater academic than practical value.

*Venous thrombosis*—Anticoagulants should be administered to patients with thrombophlebitis or phlebothrombosis regardless of the activity of an inflammatory process. Unfortunately, recent emphasis on the differential diagnosis of phlebothrombosis and thrombophlebitis has led to the mistaken idea that pulmonary embolus is unlikely when the veins appear to be inflamed.

Although, theoretically, fewer emboli should arise from clots that are strongly adherent to the walls of the veins, the tails of these clots may extend unattached for long distances within the vessels. These tails may and do produce fatal emboli. Failure to use anticoagulants when vessels are actively inflamed is, therefore, a dangerous omission.

When acute thrombophlebitis is present without evidence of embolism, Tromexan or dicumarol usually acts rapidly enough and may be used satisfactorily. However, when emboli have occurred, heparin should be given immediately, with Tromexan or dicumarol.

*Sudden arterial occlusion*—Anticoagulants are advisable for all patients who have sudden arterial occlusion, whether by embolism or thrombosis, to prevent propagation of the initial thrombus which may occlude additional key collateral branches.

If a massive saddle embolus appears at the bifurcation of the aorta and skilled surgery is available, a combination of surgery and anticoagulant therapy will probably produce the most satisfactory results. Emboli at the bifurcation of the femoral arteries may also be removed surgically. Emboli which have lodged peripherally to these areas may usually be treated at least as well by anticoagulants combined with reflex heat and other conservative measures.

Lumbar sympathetic blocks may be used before anticoagulant therapy, but should not be done during such treatment, because of the danger of fatal hemorrhage. Heparin should always be given during vascular surgery, and anticoagulants should be administered for some time thereafter. Anticoagulants may be continued for one to three weeks for maximum effectiveness.

*Coronary occlusion with myocardial infarction*—The great value of anticoagulants in treatment of coronary occlusion with myocardial infarction has been conclusively established.

As early as 1938 Solandt, Nassim, and Best suggested that anticoagulants might be effective in the prevention of coronary thrombi and of mural thrombi with myocardial infarction. In 1942, we began to use dicumarol for patients with coronary thrombosis and in 1945 our experiences in 76 such cases were reported. Nichol and Page and Peters, Guyther, and Brambel described similar observations early in 1946. Additional reports appeared during the next few years.

While the results appeared favorable, the statistics were too small to warrant final conclusions, so the American Heart Association established a committee for the evaluation of anticoagulants in the treatment of coronary thrombosis with myocardial infarction. Investigators were appointed from sixteen leading hospitals throughout the country and information was gathered concerning 1,031 patients who had coronary occlusion with myocardial infarction.

The patients were divided by means of an alternate day

(Continued on page 124)

# Prevention of Bacterial Endocarditis

PAUL A. LICHTMAN, M.D., AND ARTHUR M. MASTER, M.D.*
*Washington, D.C.* *Mount Sinai Hospital, New York City*

FROM the age of 50 years, all candidates for surgery or for diagnostic examinations apt to injure mucous membrane should receive penicillin.

Many operative procedures may lead to bacterial inoculation of the endocardium. Infective operations include tooth extraction, cystostomy, prostatectomy, fulguration of urethral tumor, lithotomy, abscess drainage, plastic vaginal repair, hysterectomy, and cholecystectomy.

Among the diagnostic procedures, cystoscopy, bronchoscopy, sigmoidoscopy, and colonic irrigation with barium enema may be dangerous. Dental treatment, even without extraction, or passage of a urethral sound sometimes has serious consequences. Colds, sinusitis, enteritis, German measles, and toe infection have been followed by carditis.

Without prophylaxis, even prostatic massage may cause bacteremia and acute or subacute endocarditis.

The heart is particularly susceptible in later life because valvular lesions are very common, yet about 1 in 6 elderly patients with anatomic cardiac disorders has no symptoms, murmurs, or other signs detectable by careful examination.

On reviewing 406 consecutive autopsies following death of elderly patients, Paul A. Lichtman, M.D., and Arthur M. Master, M.D., noted 342 instances of heart disease, an incidence of 84%.

Among 321 cases of infectious endocarditis in people of all ages, 77 apparently arose from an operative or other traumatizing factor or from obvious infection. Previous heart involvement was recorded in 19 of 20 instances of subacute disease occurring after middle life and in 9 of 11 with acute involvement. Heart lesions in the older group were rheumatic in 51% of instances, arteriosclerotic in 39%, and hypertensive, syphilitic, pulmonary, congenital, or other types in the remainder.

Gross valvular damage could be seen in more than half the diseased hearts, and the mitral valve was frequently affected. A loud blowing systolic apical murmur late in life is significant.

Most of the organisms responsible for acute or subacute endocarditis are inhibited by penicillin. Therefore, adults who have had rheumatic fever, with or without evidence of heart disease, should be given 300,000 units intramuscularly about twenty minutes before dental surgery. Children receive 150,000 units. The dose should be repeated within half an hour after the operation and twelve to eighteen hours later.

The same amounts are administered to anyone with obvious heart

* Penicillin prophylaxis of postoperative bacteremia and bacterial endocarditis. M. Ann. District of Columbia 19:663-672, 1950.

disease before a possibly traumatic diagnostic procedure.

For major surgery not complicated by infection, 300,000 units are injected immediately before operation, when the patient is on the table. Postoperatively the amounts suitable after dentistry are adequate.

If infection is recognized either before or after the procedure, larger doses of penicillin, a longer course, or a more specific antibiotic may be necessary.

After cystoscopy, administration of penicillin should be continued two to four days, or longer with obvious infection.

In cases of known heart disease, the drug is employed during severe respiratory infection.

Routine prophylaxis of all elderly patients may seem unwise, yet the usual objections are unwarranted. Severe allergic reactions occur in less than 0.2% of cases, and few people become resistant to the drug.

¶ APICAL DIASTOLIC MURMUR occurs in some patients with patent ductus arteriosus. The murmur is similar to the mid-diastolic rumble of mitral stenosis, being low-pitched, localized at the cardiac apex, and best heard after exercise with the patient in the left lateral decubitus position. Persons with widely patent ductus arteriosus who have cardiac symptoms, large pulmonary arteries, poor nutrition, and left ventricular enlargement are apt to have apical diastolic murmurs. Abe Ravin, M.D., and Ward Darley, M.D., of the University of Colorado, Denver, list three factors of importance in causing the mitral stenosis like murmur: [1] enlargement of the left ventricle causing a relative narrowing of the mitral orifice, [2] the large volume of blood traversing the mitral valve at a high rate of flow, as a result of the shunt, and [3] the thin chest and ventricular walls of children which render blood turbulence more readily audible. The mitral valve is normal in these patients.

*Ann. Int. Med. 33:903-914, 1950.*

¶ RELAPSING VIVAX MALARIA may be quickly eradicated by quinine combined with pentaquine, an analogue of pamaquin. Bernard Straus, M.D., and Joseph Gennis, M.D., give pentaquine as a monophosphate, in doses containing 10 mg. of base with 0.6 gm. of quinine sulfate every eight hours for two weeks. Attacks recurred in only 1 of 50 patients so treated at the Veterans Administration Hospital, Bronx, N.Y. The majority of cases were observed for twelve to eighteen months. With chloroquine alone, the relapse rate was 34.6%. Although many patients had minor toxic effects from pentaquine, in no case were reactions severe enough to necessitate discontinuance of the drug. In 1 case quinine was stopped because of cinchonism.

*Ann. Int. Med. 33:1411-1422, 1950.*

# Manual Artificial Respiration

ARCHER S. GORDON, M.D., FRANK RAYMON, MAX S. SADOVE, M.D., AND A. C. IVY, M.D.*

*University of Illinois, Chicago*

THE most efficient method of artificial respiration without instruments is a combination of Schafer prone pressure with a hip lift.

The push and pull maneuvers actively assist both phases of breathing and will practically double the amount of air entering the lungs with either maneuver alone (Fig. 1). After the first few minutes, the difficult lift may be replaced by a much easier rolling motion that can be continued indefinitely, with only slightly reduced air exchange (Fig. 2).

Effects of eight current technics and a few requiring apparatus, including the Eve rocking method, were compared on dead and living bodies. After measurements on 109 corpses before rigor mortis, Archer S. Gordon, M.D., Frank Raymon, Max Sadove, M.D., and A. C. Ivy, M.D., examined 11 healthy young men during voluntary suspension of breathing. Pulmonary ventilation was recorded on a basal metabolic spirometer.

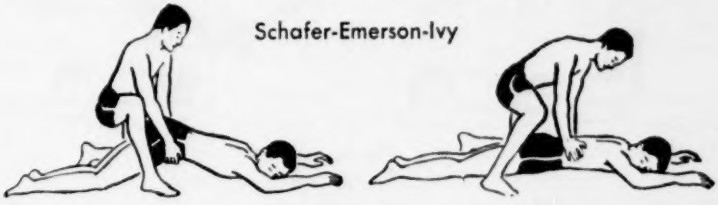


**Figure 1**

Each man was then anesthetized with curare and other agents to a state of total apnea. An endotracheal tube was inserted, and artificial respiration was performed twelve

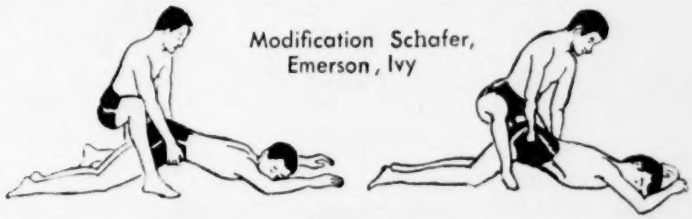


**Figure 2**

* Manual artificial respiration. J.A.M.A. 144:1447-1452, 1950.


Figure 3

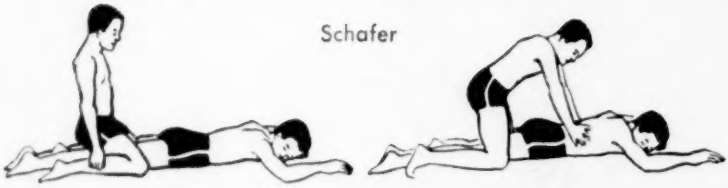


Figure 4


Figure 5


Figure 6

times per minute for periods exceeding half a minute.

All methods employed except the single Schafer, hip lift, or hip roll assist the entire breathing cycle, yet several have disadvantages.

The Silvester method (Fig. 3) raises the arms for active inspiration and presses on the chest for expiration. Ribs may be fractured, however, and in supine position the tongue may fall back and block the airway.

Schafer prone pressure (Fig. 4) produces only active expiration; passive inspiration results from elastic recoil.

The Eve rocking method (Fig. 5) requires special apparatus. As the board is tilted, shifting viscera move the diaphragm up and down.

The Holger-Nielsen routine (Fig. 6) of arm lift and scapular pressure endangers the ribs.

With the Schafer-Drinker variation of Nielsen's method (Fig. 7), broken bones are unlikely but two operators are needed to use the procedure.

Emerson's hip lift (Fig. 8) is exhausting. Active inspiration occurs as the body is raised, passive expiration with descent.

The Schafer-Emerson-Ivy technic (Fig. 1) alternates a push on the lower chest with a 4-in. lift of the hips. After the first crucial minutes, the tiring lift may be used only after every second or third pressure.

The hip roll combination (Fig. 2) is much easier and about three-fourths as effective. The rescuer's knee, fist, or hand is placed under the victim's nearest hip. The far hip is then lifted and the body rolled over the supporting knee, fist, or hand, so that most or all the abdominal surface is raised.

The failing circulation is also helped. Return of venous blood to the heart is increased by the head-down position and intrathoracic suction during inspiration.

The effects of different technics


Figure 7

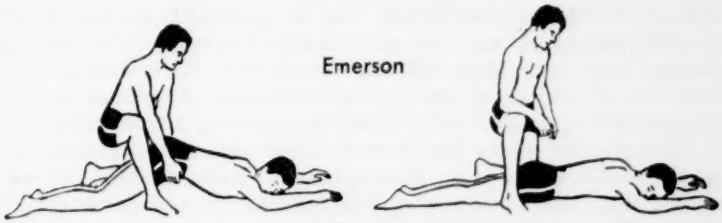


Figure 8

in conscious, unconscious, and post-mortem states correspond perfectly. However, ventilation of totally apneic living subjects is twice that of warm dead bodies, and the rate for a living person voluntarily holding his breath is 3 times as great as that after death. Some methods favor certain body types, for instance, the Silvester method for the tall, thin individual.

In prolonged or special administration, most mechanical devices are superior to manual methods. Anesthetic and fire or police emergency equipment is indispensable with major surgery, extensive burns, or broken bones.

In the critical period of resuscitation, however, mouth-to-mouth or manual respiration is generally used. Apparatus is often delayed and must be considered an adjunct, not a substitute.

## Emergency Therapy of Bleeding Esophageal Varices

ALADAR LORANT, M.D.*

ELEVATION of the foot of the patient's bed and pelvis will reverse the direction of gravitation and often stop bleeding from varices of the esophagus.

All gastrointestinal ulcers bleed from arteries or capillaries, but bleeding from varices is unique, being venous in type. In portal hypertension, venous blood is forced through the coronary veins of the stomach and the veins of the lower esophagus into the azygos vein and hence to the vena cava superior. The veins of the esophagus, receiving additional blood from the portal circulation, dilate readily, forming varices because of lack of support on the intimal surface. Since these varices lie below heart level, the reversal of the direction of gravitation will diminish bleeding tendencies by increasing the velocity of blood flow and reducing lateral pressure.

Following the theory that reversal of the direction of gravitation would reduce pressure in the esophageal varices, causing collapse of the varix and cessation of bleeding, Aladar Lorant, M.D., of Queens General Hospital, Jamaica, N.Y., found the following method successful in at least 5 of 6 cases of profuse bleeding with portal hypertension:

1] Elevating the foot of the bed 10 in.; higher, if results are not satisfactory.

2] Putting the patient in a prone position with pelvis lifted 15 to 20 in.

After cessation of bleeding, hepatic failure and cholemia may occur. Therefore, early replacement of blood is essential.

* Emergency medical treatment in bleeding esophageal varices. Gastroenterology 16:716-719, 1950.

# Diet During Recovery from Heart Failure

LLOYD T. ISERI, M.D., ALBERT J. BOYLE, M.D.,
AND GORDON B. MYERS, M.D.*
*Wayne University, Detroit*

ELECTROLYTE balance must be carefully adjusted during recovery from congestive heart failure. Besides the urinary excretion of large amounts of water and salt, important shifts of minerals occur between the cells and the interstitial fluid.

Particular care is required when restriction of salt is needed to achieve cardiac compensation. Mercurial diuretics, so helpful clinically, also enhance the development of electrolyte imbalance.

COMPOSITION OF 50-MG. SODIUM DIET

| | | |
|---|---|---|
| Water | 2,500 | cc. |
| Sodium | 2.25 | mEq. (50 mg.) |
| Potassium | 108.30 | mEq. (4,330 mg.) |
| Chloride | 56.97 | mEq. (1,320 mg.) |
| Protein | 67.50 | gm. |
| Carbohydrate | 320.00 | gm. |
| Fat | 70.00 | gm. |
| Calories | 2,150 | |

Patients with little myocardial reserve often fail to become free of edema and pulmonary congestion despite digitalis, diuretics, and sodium restriction, as with a 400- to 1,000-mg. sodium diet. Lloyd T. Iseri, M.D., Albert J. Boyle, M.D., and Gordon B. Myers, M.D., advocate a 50-mg. sodium diet for patients refractive to usual therapy.

This diet consists of 250 gm. of a milk powder, Lonalac, which has been dialyzed to remove most of the salt. The milk powder is dissolved in 2,000 cc. of water together with 125 gm. of sugar. This formula is administered in five divided doses throughout the day. Orange juice, 500 cc., is also given each day.

Although low in sodium, this regimen is liberal in potassium and adequate in protein, calories, and water (see table). Vitamin supplements should be used. Most patients take the diet well, without vomiting or diarrhea.

Clinical results were excellent for patients with cardiac failure who did not improve on digitalis, diuretics, and moderate salt restriction.

Balance studies reveal pronounced changes in water and electrolyte balance during recovery. Although most water lost is extracellular, a significant decrease in cellular fluid volume occurs.

Large amounts of sodium and chloride are excreted in the urine. However, in addition, sodium and potassium enter the cells during compensation. A hypertonic cellular state would be expected. This is probably avoided by a conversion of intracellular base from an osmotically active to an inactive form. Therefore, in retrospect, as congestive failure develops, intracellular inactive base becomes osmotically active or ionized.

* Water and electrolyte balance during recovery from severe congestive failure on a 50 milligram sodium diet. Am. Heart J. 40:706-730, 1950.

A positive nitrogen balance usually develops in patients receiving the diet described. This condition is undoubtedly beneficial and may partly explain the effectiveness of the regimen. The kidneys, unless too badly damaged, will preserve chloride during diuresis, if hypochloremia was present initially, and thus permit a rise in plasma level.

## Serum Cholesterol and Diet

MENARD M. GERTLER, M.D., STANLEY M. GARN, PH.D., AND PAUL D. WHITE, M.D.*

No correlation exists between the amounts of cholesterol in the diet and in the serum. Patients with coronary artery disease ingest no larger amounts of cholesterol than normal individuals of the same age.

These facts were revealed in a study of 139 healthy men and of 90 who had experienced myocardial infarction before the age of 40, analyzed by Menard M. Gertler, M.D., of Presbyterian Hospital, New York City, and Stanley M. Garn, Ph.D., and Paul D. White, M.D., of Harvard University, Boston.

The two groups were statistically comparable in age. Dietary information was obtained by personal questionnaires and the weekly intake of cholesterol was computed from a standard table.

The total cholesterol ingested by persons with coronary disease was actually significantly lower than that taken by healthy individuals. The serum cholesterol levels, however, were significantly higher in the coronary group. In neither group could any significant correlation be detected between ingested cholesterol and serum cholesterol.

The normal group also had higher intake of protein and fat and individual body weight was about 7 lb. more than for the coronary group. No difference was found in the amount of cholesterol ingested by individuals with conspicuously low- or high-serum cholesterol levels. Hence, diet alone does not explain the higher levels of serum cholesterol in patients with coronary disease.

No significant variation occurs in the serum cholesterol of human subjects following ingestion of large amounts of cholesterol, 5 to 10 gm. The serum cholesterol level decreases temporarily with a low-cholesterol diet, but, within six to nine months, returns to the previous level. This readjustment is probably made by the gradual replacement of dietary cholesterol by the endogenous synthesis of cholesterol.

* Diet, serum cholesterol and coronary artery disease. Circulation 2:696-704, 1950.

# Pleural Fluid Examination for Cancer

HERBERT M. BAGANZ, M.D., AND WILLIAM E. EHRICH, M.D.*
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CYTOLOGIC study of pleural fluid by the cell-block technic will reveal tumor cells in about three-fourths of patients with carcinoma involving the pleura.

Bronchogenic carcinoma most frequently provokes pleural effusion, but metastases from cancer of any organ may involve the pleura. The fluid is usually bloody, but may be clear and amber colored.

The technic employed by Herbert M. Baganz, M.D., and William E. Ehrich, M.D., is done as follows:

Nine parts of pleural fluid is mixed with one part of 40% formalin solution. After twenty-four hours, the fluid is centrifuged at 1,500 r.p.m. until a satisfactory sediment gathers. The sediment is resuspended in 95% alcohol, allowed to stand for one day, and centrifuged again.

The sediment is then wrapped in gauze and embedded in paraffin. Sections of the paraffin block are made in the usual manner and stained.

Tumor cells were found in 25 of the cell-block preparations of pleural fluid from 31 patients with cancerous involvement of the pleura.

The specific gravity and protein content of pleural effusions are of little value for diagnosis of cancer (see table).

PLEURAL FLUID FINDINGS

| | *Protein Content* | | *Specific Gravity* | | *Cell Counts* | |
|---|---|---|---|---|---|---|
| | Average gm. % | Range gm. % | Average | Range | Average per cu. mm. | Predominating cell |
| Cancer | 4.15 | 1.1-7.2 | 1.021 | 1.004-1.041 | 1,340 | Mesothelial |
| Congestive circulatory failure | 1.64 | 0.6-2.6 | 1.0125 | 1.006-1.025 | 1,000 | Mesothelial |
| Congestive circulatory failure with pulmonary infection | 3.34 | 1.9-4.6 | 1.0195 | 1.006-1.031 | | |
| Tuberculosis | 5.12 | 3.5-6.1 | 1.0198 | 1.008-1.035 | 1,650 | Lymphocyte |
| Acute infection | | | 1.024 | 1.011-1.032 | 85,750 | Polymorphonuclear leukocyte |

* Cytological and chemical study of pleural fluid with special reference to the cell-block technic. J. Philadelphia General Hospital 1:79-84, 1950.

¶ ELECTROCARDIOGRAMS should always be made with the standard bipolar leads, the aV limb leads and the six precordial V leads. R. H. Rosenman, M.D., and associates at the Michael Reese Hospital, Chicago, analyzed 515 records, each made with 6 and 15 leads. More than the conventional 6 leads were required for correct interpretation in 15% of cases. For children less than ten years old, chest lead $V_{4R}$ is also employed and $V_5$ omitted.

*Am. Heart J. 40:573-584, 1950.*

# Vesicosigmoidal Fistulas

CHARLES W. MAYO, M.D.
*Mayo Clinic, Rochester, Minn.*
CHARLES P. BLUNT, M.D.*
*Lynchburg, Va.*

PRIMARY resection of the sigmoid and closure of the vesical opening is usually the best management for vesicosigmoidal fistulas.

During a ten-year period at the Mayo Clinic, Charles W. Mayo, M.D., and Charles P. Blunt, M.D., found 46 of 202 cases of diverticulitis complicated by vesicosigmoidal fistulas.

The fistulas appear 5 times as often in men as in women, probably because the uterus acts as a barrier between sigmoid and bladder. Most of the patients are past middle age.

In most cases, the chief symptom arises in the urinary tract and consists of dysuria, urinary urgency, or frequency. Intestinal complaints are slight compared to the intense distress caused by involvement of the bladder.

Pneumaturia occurs in almost every case, followed in approximately two weeks by perineal, genital, or suprapubic pain. About three months later, slightly over half the patients notice feces in the urinary stream for the first time.

When a patient with pain and fever caused by diverticulitis has dysuria, urinary urgency, or frequency, the bladder has become involved. In many cases, dysuria and fever abate for a short period after development of the fistula. Approximately one year after the appearance of feces in the urine, gross hematuria is noticed.

Proctoscopic examination reveals nothing unusual in about half of cases, and changes indicating fistula are observed in less than 10%.

Barium enema discloses diverticulosis or diverticulitis in most cases, and a fistula of the bladder is demonstrable in 20%. Cystoscopic examination will show the presence of a fistulous opening in 85% of patients.

Preoperative preparation consists of a low-residue diet, administration of laxatives, enemas, and intestinal antiseptics, such as succinylsulfathiazole or antibiotics, and correction of hypoproteinemia and fluid and electrolyte imbalance by intravenous solutions and blood transfusions. A colostomy is usually constructed to divert the fecal stream and permit the inflammatory process to subside.

The operation most frequently employed in the 46 cases was extraperitoneal resection of the sigmoid and closure of the opening in the bladder. Next most common was resection of the sigmoid with end-to-end anastomosis and a preliminary or concomitant colostomy.

* Vesicosigmoidal fistulas complicating diverticulitis. Surg., Gynec. & Obst. 91:612-616, 1950.

# Gastric Mesenchymal Tumors

CHARLES J. FRANCE, M.D., AND OSBORNE A. BRINES, M.D.*
*Wayne University, Detroit*

NONEPITHELIAL gastric tumors are not uncommon in surgical practice and may offer a challenge in recognition and treatment.

Behavior is much like that of epithelial growth. The manifestations may fail to develop before death or consist of weakness, epigastric discomfort or pain, abdominal swelling, weight loss, intermittent hematemesis, or tarry stools.

The diagnosis is usually made by laboratory examination of tissue. Small benign tumors are excised locally, and larger or multiple lesions with most of the stomach. If removal is complete, prognosis is excellent. Malignant mesenchymal neoplasms have a postoperative five-year survival rate of 25 to 30%, considerably better than for gastric cancer.

In the Detroit Receiving Hospital, 10 mesenchymal tumors of the stomach were obtained at operation and 25 were observed at autopsy from 1922 to 1948; 57% were benign and 43% malignant. Incidence among all gastric neoplasms was 9.8%.

Charles J. France, M.D., and Osborne A. Brines, M.D., classify mesenchymal gastric tumors into 6 types based on tissue of origin: myogenous, fibroblastic, lipoblastic, endothelial, neurogenous, and lymphogenous. Neurogenous forms, though ectodermal, may contain mesenchymal elements because of the intimate relation of lemmoblasts and fibroblasts in nerve sheaths.

The commonest types of mesenchymal growth are myogenous and fibroblastic. Some tumors appear malignant yet remain harmless for long periods; others with well-differentiated cells invade surrounding tissue, making classification difficult.

*Leiomyoma,* which outnumbers all other benign tumors in some reported series, may be as large as 6 kg. in weight. The majority do not cause symptoms, yet others produce mucosal ulceration and severe bleeding or intermittent ball-valve pyloric obstruction with cramping pain and vomiting. A pedunculated submucous myoma may drag the pylorus into the duodenum.

*Leiomyosarcoma* grows slowly and metastasizes late. Early complete surgical removal may terminate the disease. Tumors usually involve the pyloric antrum and often produce pressure necrosis or ulcer.

The triad of epigastric pain or distress, bleeding, and a palpable mass in the upper abdomen should arouse suspicion, but cachexia, debility, and weight loss are unusual. When first seen, patients are usually about 47 years old.

*Fibroma* is much less frequent than leiomyoma. Lesions are single or multiple, vary from a few milli-

* Mesenchymal tumors of the stomach. Arch. Surg. 61:1019-1035, 1950.

meters in diameter to weight of 5 kg., and usually grow near the pylorus. Peptic ulcer may be simulated; obstruction or bleeding may occur.

*Fibrosarcoma* often takes a pedunculated exogastric form but occasionally infiltrates. Less common than leiomyosarcoma, the neoplasm also grows slowly in most cases and metastasizes late.

*Lipoma* accounts for about 3% of benign gastric tumors. The lesion may be sessile, pedunculated, or even dumbbell-shaped, projecting through the gastric wall.

*Neurofibroma* generally arises along the lesser curvature, with or without systemic neurofibromatosis, and is often symptomless. As with all benign tumors, manifestations depend on position, size, ulceration, and other factors. From 8 to 15% of neurofibromas are said to become malignant.

*Neurilemmoma* is firm, round, encapsulated, and usually found in the anterior stomach wall. A single neoplasm may fill the gastric lumen, yet many are small and innocuous. Malignant transformation is rare.

*Hemangioma, lymphangioma,* and *benign hemangioendothelioma* usually grow in the middle third of the anterior gastric wall. Most lesions are single, smooth, soft, bluish black to red, and 2 to 8 cm. wide. Ulceration and hemorrhage are likely.

*Angiosarcoma* is infrequent.

*Benign lymphoma* is scarce, possibly nonexistent. *Lymphoblastoma,* though of mesenchymal derivation, does not act like other malignant forms and perhaps does not warrant the term sarcoma. Various cellular types of lymphoblastoma represent the same disease, and any class of cell may proliferate locally, systemically, or in the blood as leukemia.

## Surgical Indications for Nontoxic Goiter

LAWRENCE W. SLOAN, M.D.*

NODULAR goiters in children and young adults should be considered malignant until proved otherwise, especially if cervical nodules are discovered outside the gland.

In older persons, smooth, diffusely enlarged goiters and those containing multiple nodules are commonly benign unless hard and fixed and, if cancerous, are generally incurable, remarks Lawrence W. Sloan, M.D., of Columbia University, New York City.

The less malignant types of cancer probably start at a very early age and disseminate rapidly. If glands seem to contain solitary nodules, surgery must be done without delay, regardless of the tumor's consistency or degree of fixation.

Men with nodular goiters should be given special attention and excision of the growth probably advised.

* Some surgical problems of nontoxic goiter. J. Clin. Endocrinol. 10:1092-1098, 1950.

# Tracheotomy after Thyroidectomy

FRANK H. LAHEY, M.D., AND WALTER B. HOOVER, M.D.*
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THE patient's life often depends on the rapidity with which tracheotomy is done when breathing becomes obstructed after thyroidectomy. This time element remains as an unconquered, yet controllable mortality factor.

The types of tracheal obstruction with thyroidectomy and the proper methods for tracheotomy in such cases are described by Frank H. Lahey, M.D., and Walter B. Hoover, M.D.

## TYPES OF OBSTRUCTION

Gradual and progressive tracheal obstruction resulting from accumulating and increasing edema of the larynx is particularly insidious and often occurs at the most inopportune hours. During the first two nights after operation, when respiration is most likely to be slowed because of sedation, the interpretation of the adequacy of air intake is usually the responsibility of a nurse and the least experienced members of the surgical staff. Observations are made in a darkened room in which oxygen exchange is difficult to assess. Yet the decision to postpone tracheotomy until morning may be fatal.

When breathing is obviously difficult, the surgeon who did the operation or a trained assistant should be called. If the slightest doubt exists about the oxygen exchange, a tracheotomy must be done at once, or, at least, an experienced person should remain at the bedside until breathing improves and tracheotomy is no longer a consideration.

When obstruction occurs as a result of the postoperative accumulation of blood beneath the muscle flaps, the necessity to open the trachea is more urgent. The blockage occurs rapidly and more completely. A decision may have to be made in a matter of minutes.

Hemorrhage from the superior or inferior thyroid artery causes a distinct sense of firmness of the front of the neck with a forward projection of the muscles and skin flaps. When this is noticed, the surgical assistant or even a nurse should immediately open the skin flap by sterile or unsterile means. If elevation of the skin flap does not relieve respiratory embarrassment, the entire incision is opened, blood clots bailed out with the fingers, and the arterial oozing controlled by a pack and by finger pressure, until assistance can be obtained to ligate the vessel. Care is used to avoid compression of the trachea.

Such postoperative bleeding may be obviated at the time of surgery by double ligation of the superior thyroid artery under good visualization, and by tying but not dividing the inferior thyroid artery. If divi-

* Tracheotomy after thyroidectomy. Ann. Surg. 133:65-76, 1951.

sion seems necessary, double ligatures are used.

Tracheal narrowing associated with an intrathoracic goiter is usually relieved when the mass is removed from the chest. Occasionally, hyperthyroidism, with retardation of the action of the vocal cords, may create concern about adequate intake of air postoperatively when the expected degree of edema secondary to removal of the goiter is taken into consideration. In such cases, tracheotomy should be done after removal of the adenoma in the chest.

With advanced carcinoma of the thyroid involving both lobes, roentgen radiation without complete thyroidectomy achieves best results. One entire lobe and the isthmus are excised, the whole trachea is exposed, and a tracheotomy performed. Postoperative radiation may then be done without the possibility of edema and respiratory difficulty that might necessitate emergency tracheotomy through the unremoved malignant tissue over the isthmus.

When previous thyroid surgery has injured the nerve on one side and the vocal cord is fixed, the glottic space is materially reduced. If additional thyroid surgery is necessary which may compromise air intake, a temporary tracheotomy should be done as the operation is completed. Cardiac damage also increases the need for close watching, since even moderate degrees of obstruction are not well tolerated.

### INDICATIONS

Retraction of the supraclavicular fossae or rib interspaces, or cyanosis with labored respirations demands tracheotomy. Indirect laryngeal examination may be required when only audible stridor is heard with rhonchi and rales in the chest.

A test of treatment consists of elevation of the patient's head, humidification of the air, and administration of expectorants to aid elimination of secretions, getting the patient to cough, and the use of an oxygen tent. If the patient's color does not improve, tracheotomy is done.

### TECHNIC

The opening in the trachea is best placed below the second tracheal ring or even farther down, at least below the first tracheal ring. For adults, the opening should be just large enough to receive a No. 5 or No. 6 tube snugly.

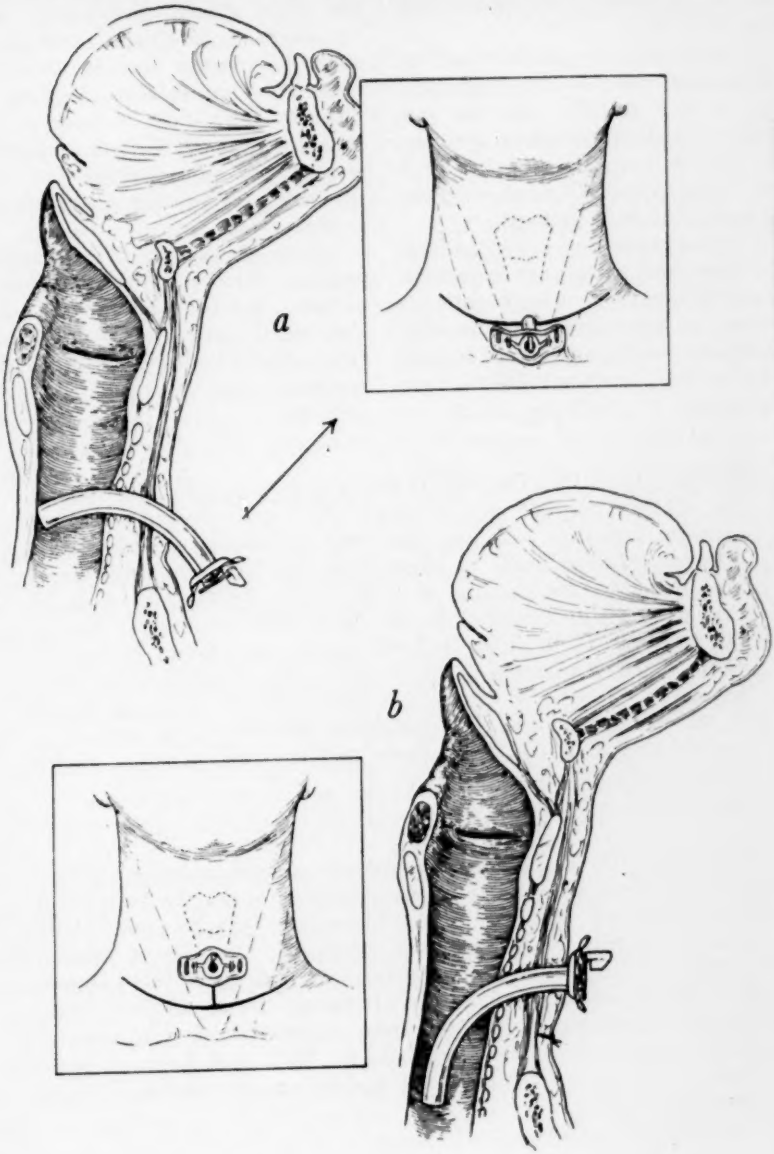
The tube should not touch the cricoid cartilage, since cricoid perichondritis or cicatricial stricture of the larynx may result. In cases of intrathoracic goiter an extra long tube may be required to pass the tracheal narrowing in the superior mediastinum.

The tracheal opening of the tube must be lower than the opening in the skin; if both are at the same level, tissues above the incision will press against the tube, bringing the lower end against the back wall of the trachea, blocking the airway and irritating and ulcerating the tracheal wall.

The incorrect position is illustrated in Figure *a*.

When the tracheotomy is to be done through a previous low thyroid incision, a second short incision

**Incorrect (*a*) and Correct (*b*) Placement of Tube**



perpendicular to the first may be necessary to permit the tracheotomy tube to lie freely in the correct position (Fig. *b*).

A gauze drain is placed about the tracheotomy tube from tracheal opening to skin surface, and the skin is drawn quite closely about the tube. The drain may be removed in a few days when the outer tracheotomy tube is first changed.

Regular removal of secretions from the tube and trachea is important. Humidifying the air helps to prevent drying, as does saline solution with or without small amounts of sodium bicarbonate introduced directly into the tube.

If respiratory distress is noted after obvious secretions are cleaned away, the nurse should immediately call the physician in charge, since plugs or dry secretions may be blocking the trachea or bronchi. Feeding is given by Levin tube or fluids parenterally when swallowing is ineffective because of incontinence of the sphincteric or valvular action of the larynx.

When the patient is comfortable and can sleep with the tube closed, or when indirect laryngeal examination shows motion of at least one cord, adequate airway has been reestablished and the tube may be removed.

¶ AUREOMYCIN FOR PERITONITIS from appendicitis reduces the average hospital stay to twelve days as compared to about eighteen days with penicillin and other antibiotics. An initial dose of 3 gm. is given orally to adults, then 250 mg. every four hours. The first dose for children is 1 to 2 gm., dissolved in 2 oz. of Coca-Cola syrup if desirable. In cases with intubation, George H. Yeager, M.D., William D. Lynn, M.D., and Thomas G. Barnes, M.D., of the University Hospital, Baltimore, administer the drug in 100 cc. of aqueous solution. A cottonseed oil retention enema is an effective method of aureomycin administration. An intravenous preparation of aureomycin may be injected every twelve hours, 1 gm. in 500 cc. of saline.

*South. Surgeon 16:1192-1199, 1950.*

¶ ACUTE PANCREATITIS commonly depresses serum calcium between the fourth and ninth days, most often on the fourth and fifth. Although only one or two low values may be found, daily tests are useful in diagnosis and prognosis. Amounts of calcium withdrawn from blood and deposited in and about the pancreas depend on severity and length of disease. Serum calcium levels between 7 and 8.9 mg. per cent were observed in 9 of 10 cases of acute pancreatitis by William F. Lipp, M.D., and Roger S. Hubbard, Ph.D., of the University of Buffalo and the Buffalo General Hospital, N.Y.

*Gastroenterology 16:726-730, 1950.*

# Problems of Geriatric Anesthesia

FRANCIS F. FOLDES, M.D.*
*University of Pittsburgh*

THE number of operations on people over 60 years old is steadily increasing. If the altered physiologic reactivity to disease and drugs is kept in mind, the surgical risk is hardly greater than for younger groups.

Before operation, anemia, dehydration, and vitamin or mineral deficiencies should be corrected. Peripheral edema is reduced and fluid in the peritoneal or pleural cavities removed.

Digitalis is used for congestive heart failure and sometimes as a precaution, when cardiac reserve is low. The patient should be assured that operation is not too dangerous, despite his age.

Francis F. Foldes, M.D., selects the anesthetic agent and regulates dosage with great care. Premedication is given in two-thirds to half the ordinary amount for adults. Because of slow absorption, the drug is administered earlier than usual or by vein.

With severe cerebral arteriosclerosis or mental confusion from another cause, paraldehyde, chloral hydrate, and tincture of opium are used instead of barbiturates and scopolamine.

Regional anesthesia interferes least with organic functions, and local methods are also well tolerated. Since reflex irritability and pain sensitivity are dulled, bilateral intercostal block may provide sufficient relaxation for major abdominal procedures.

Spinal anesthesia is safe if kept below the ninth or tenth thoracic segment and may even improve diuresis and circulation. Caudal anesthesia is employed for rectal or urogenital surgery, and refrigeration anesthesia for amputation of a leg.

General anesthesia is undertaken with nitrous oxide and oxygen if possible. In the aged, cyclopropane tends to incite arrhythmia and hypertension followed by hypotension, although the hazard may be lessened by intravenous procaine.

For good relaxation with the highest possible oxygen concentration, ether is employed except with severe kidney or liver disease. If the myocardium is damaged, digitalis should be given beforehand.

Pentothal sodium anesthesia is allowed but should be supplemented with nitrous oxide and oxygen to control pain, and with a drug such as d-tubocurarine chloride or a recent synthetic, decamethonium bromide, for good muscular relaxation.

General anesthesia should be induced smoothly and maintained at moderate depth and duration. Because hypoxia and accumulated carbon dioxide are intolerable, endotracheal tubes are used often.

Open and partially open systems

* Some problems of geriatric anesthesia. Anesthesiology 11:737-744, 1950.

are preferred, such as endotracheal insufflation with a Richardson bottle or Flagg can. If a closed system is indispensable, to-and-fro absorption is better than circle filters. Breathing may be assisted, to relieve the circulatory load.

For a toothless patient, a closed system is difficult without an endotracheal tube. The problem may be solved by the new Bennett mask or a prosthesis between gums and the inner lip and cheek surfaces.

As anesthesia terminates, the lungs should be filled with air. Postoperatively, deep breathing is encouraged, and peripheral alveoli are expanded with blow bottles. Obstructive bronchial secretions may be removed with a woven silk catheter instead of a bronchoscope.

Chances of pulmonary infection and embolism are decreased by penicillin prophylaxis, preoperative ligation of the femoral vein, or postoperative heparinization and early activity.

During convalescence, analgesics and sedatives are used sparingly. Comfort without respiratory depression may be ensured by intercostal block with nupercaine in oil or other agent having prolonged effect. As an alternative, 0.1% procaine or 5% alcohol is injected intravenously in 5% dextrose solution.

## Prevention of Nausea from Diethylstilbestrol Therapy

KARL JOHN KARNAKY, M.D.*

DIETHYLSTILBESTROL, a valuable remedy for accidents of gestation, menstrual disorders, senile or infectious vaginitis, and endometriosis, produces nausea and vomiting in 6 to 10% of nonpregnant patients.

Karl John Karnaky, M.D., of Baylor University, Houston, believes that these effects may be caused by a deficiency of folic acid and other B complex vitamins.

The following method helps prevent reactions: About twenty-four hours before stilbestrol is started, 1 cc. of soluble vitamin B complex is given intravenously, and 50 to 100 mg. of testosterone propionate is injected intramuscularly. The next day at 9 P.M., ¼ of a 25-mg. tablet of Desplex is given orally. This tablet combines micronized, triple crystallized stilbestrol, vitamin C, and vitamin B complex, including folic acid. Every four days, ¼ table is added until the desired therapeutic level is reached.

If reactions develop, the injection of soluble B complex is repeated. The dose of stilbestrol is reduced by ¼ tablet, and additions of ¼ tablet are made every week rather than every four days.

An oral supplement of 10 mg. of testosterone propionate may be given three times daily and at bedtime for seven to ten days.

* The use of B complex and vitamin C for the prevention and elimination of nausea and vomiting from diethylstilbestrol. Surg., Gynec. & Obst. 91:617-620, 1950.

# Abnormal Climacteric Bleeding

J. ROBERT WILLSON, M.D., AND M. JOSEPH DALY, M.D.*
*Temple University, Philadelphia*

HYSTERECTOMY is frequently preferable to radiation castration for control of benign climacteric bleeding.

J. Robert Willson, M.D., and M. Joseph Daly, M.D., believe that the increasing safety with which hysterectomy can be performed, the desirability of preserving ovarian function, and the possibility of cancer growing in a retained uterus are considerations for treating abnormal climacteric bleeding by surgery instead of by irradiation.

Before active therapy is instituted, decision must be made as to whether the bleeding results from a benign or a malignant lesion and whether the blood loss will interfere with the patient's well-being. Every effort must be made to detect possible cancer by curettage and biopsy. When loss of blood has no serious consequences and the source is not malignant, the patient is observed closely for several months until the bleeding has ceased.

Treatment with endocrine preparations is unwarranted, because bleeding with no pelvic disease usually results from early ovarian failure, the progression of which cannot at this time be prevented. Since the abnormality so frequently indicates irregularity in ovarian function and since gonadal rejuvenation is not possible, the bleeding must be stopped completely and permanently.

The following factors must be considered in choosing between hysterectomy and irradiation therapy:

Deaths from ovarian irradiation are rare and, in this respect, castration is superior to hysterectomy. However, the mortality from hysterectomy today is less than 0.5% if patients are carefully chosen and good pre- and postoperative care is employed.

When subjective symptoms of ovarian failure are not manifest, castration by irradiation may add a serious complication. The sudden precipitation of menopausal symptoms and the atrophic changes in the genital tract, at times appearing more severe than after the natural menopause, may be most undesirable for the physiologically young woman.

Since castration must be complete and permanent, these consequences cannot be avoided. Substitution for the abolished ovarian function, unless carefully managed, may reactivate the endometrium and cause further bleeding.

For women between the ages of 40 and 55 years, hysterectomy is indicated if bleeding from a benign lesion is sufficient to require control and if hospital facilities are adequate

* Changing indications for hysterectomy in the climacteric woman. Am. J. Obst. & Gynec. 60:1088-1100, 1950.

and an experienced surgeon is available.

Small fibroid tumors may be irradiated but if, because of location, degeneration, or infection, fibromas produce symptoms that are unrelated to blood loss, hysterectomy is advisable.

When bleeding is associated with any condition for which irradiation is unwise, the uterus should be excised. A thick-wall uterus often prevents sufficient dosage of radium from reaching the ovaries, so that castration is not complete and irregular bleeding continues.

Pedunculated tumors are better excised, the subserous ones because of the possibility of torsion and the submucous type because of potential infection, necrosis, and continued bleeding. Old pelvic inflammatory disease frequently produces adhesions, and any adherent loops of bowel may be overirradiated and become necrotic.

Cervical or uterine infection may extend laterally and produce pelvic cellulitis following irradiation by radium. Ovarian lesions under 5 cm. in diameter are usually not neoplastic; irradiation is definitely inadvisable for lesions over that size. If surgery is done, the uterus is removed at the same time to control the bleeding.

Hysterectomy should not be performed for patients with advanced cardiovascular-renal disease, uncontrolled diabetes, or blood dyscrasias which limit life expectancy to a few years even though the blood loss is associated with a large fibroid or other surgical conditions. In such cases, irradiation may be used to control bleeding even though ordinarily undesirable.

When bleeding requiring control occurs with such vaginal conditions as relaxation or prolapse necessitating surgical correction, hysterectomy is recommended, since the uterus can be removed vaginally as part of the operation.

If hysterectomy is decided upon, a total operation is done because of the annoying benign and potentially malignant lesions occasionally developing in a residual cervix. Since one of the major reasons for hysterectomy instead of irradiation is the preservation of ovarian function, one or both ovaries are left, unless the woman is in the postmenopausal period or signs of ovarian failure are observed.

¶ ECTOPIC PREGNANCY may develop in both adnexa at the same time with embryos of the same or different ages. An instance observed at the Henry Ford Hospital, Detroit, by H. L. Stewart, Jr., M.D., brings the number of proved reported cases to 140. The preoperative diagnosis is generally pelvic inflammatory disease, bilateral tumor, or single ectopic pregnancy. Life is usually saved by blood transfusion, prompt operation, and adequate antibiotic therapy. To preserve menstrual function, an ovary and the uterus should be left if possible.

*Western J. Surg. 58:648-656, 1950.*

¶ SCARLET FEVER subsides rapidly when 150,000 units of crystalline penicillin G in buffered tablets is given orally every eight hours for ten days. The optimum schedule was determined by Louis Weinstein, M.D., and Thomas S. Perrin, M.D., of Boston University in treatment of 356 hospital patients. Fever usually disappeared in three days. Therapeutic blood levels of penicillin maintained for only six to eight hours daily removed beta-hemolytic streptococci and practically eliminated suppurative complications but did not entirely prevent rheumatic fever.

*J. Pediat. 37:844-853, 1950.*

## Use of Pacifier in Therapy of Infantile Colic

MILTON I. LEVINE, M.D., AND ANITA I. BELL, M.D.*

SUCKING a dummy teat usually stops the crying and irritability of children with symptoms of colic. Favorable effects of the pacifier indicate that colic may be caused by an unfulfilled need for oral gratification, often through thumb sucking, or by abdominal pain from spasm of intestinal muscles of a hypertonic baby.

Milton I. Levine, M.D., and Anita I. Bell, M.D., of New York Hospital and Cornell University, New York City, find that babies who have colic are usually hypertonic. Possibly an unfulfilled desire to suck gives rise to tension which, in turn, produces intestinal spasm, distention, and pain. Since most infants relax completely during nursing or when sucking their fingers or fists, the use of the pacifier seems a rational method to banish hypertonicity and tension.

Pacifiers were given to 28 infants who had frequent daily attacks of restlessness, irritability, and crying. Most of them were on self-demand feeding schedules. In all but 3 instances, symptoms were alleviated. The pursing of the lips around the dummy teat with intermittent relaxation and closure had immediate relaxing effects. Some children required the device much of the time, even during sleep. Usually no swallowing motions were aroused, so that air was not swallowed.

The majority of the babies gave up the pacifier spontaneously, usually at nearly 14 months of age. In 3 cases the pacifiers were discontinued by action of the children's parents. Only 2 of the patients were thumb suckers, and then only at night after use of the pacifier had been discontinued. These 2 children had discarded pacifiers early, one at 5 and the other at 10 months.

* The treatment of "colic" in infancy by use of the pacifier. J. Pediat. 37:750-755, 1950.

# The Fractured Orbit

D. H. ANTHONY, M.D.*
*Memphis*

Old or recent fracture dislocations involving the middle third of the facial bones and orbit may require services of the plastic surgeon, rhinologist, and ophthalmologist.

The diagnosis is made chiefly by roentgen examination and eye tests, since swelling may interfere with palpation. Acuity of vision and status of the fundi should be recorded as soon as possible after injury, then monthly for six months.

The cover test is indispensable. More than a few diopters of diplopia, particularly in upward or outward gaze, warrants surgical repair of the orbital floor, rim, or both.

The best splint for a fresh break in the orbital floor is a balloon inserted in the maxillary sinus and filled with water. To raise depressed bone after healing, D. H. Anthony, M.D., employs a miniature jackscrew.

*Recent fractures*—If the margin of the orbit is only slightly dislocated, the fragments may be manipulated through the skin by a towel clamp, and the rough edges may hold good position until healed.

When the malar bone is slightly displaced downward and backward, the buccal mucous membrane may be incised and the fragment replaced by an elevator. Occasionally fragments are pushed into position by a No. 7 Ritter sinus probe through a small antrostomy in the inferior nasal meatus.

Some depressed fractures of the orbital floor or rim, if not more than seven days old, are reduced and splinted by a small oblong balloon. A very small horizontal slit is made in the inferior meatus, the balloon is slipped through, and water is injected under considerable pressure.

Bones are usually forced into place within a few minutes, and pressure is then lowered by removing a little fluid. Since the balloon tends to move back into the nose, a small steel washer with string attached is placed over the stem before insertion. After healing, balloon and washer are withdrawn.

For fracture not reducible by water pressure, the canine fossa is incised with the Caldwell-Luc approach. Pieces are replaced by finger or a blunt instrument, and the balloon is inserted as a splint.

To prevent herniation of the balloon through the external maxillary opening, a stainless steel cross plate may be introduced. After healing, usually within four weeks, an incision is made through the buccal mucous membrane, and the cross plate is folded and removed.

Complete transverse fracture dislo-

* The fractured orbit: diagnosis and surgical treatment. Tr. Am. Acad. Ophth. & Otol. 1950. Instruction Section, Course No. 205.

cation of the maxilla on one or both sides requires Adams' deep internal vertical wiring, with or without a balloon or jackscrew. In case the jaws are wired together, the Harper cotter key method is preferred.

*Healed fractures*—The small jackscrew is made of noncorrosive stainless steel, the jack in two sizes and the screw in three lengths. The plate is bellied up or down, fits a pivot on the screw top, and can be bent or cut to shape.

A large Caldwell-Luc incision is made through the canine fossa, the anterior sinus wall is partly removed, and an opening for permanent drainage is cut through the inferior meatus.

The bone is refractured and, if necessary, the orbital rim is corrected with a guarded chisel until fragments are mobilized. The jackscrew is firmly placed, the screw extended with a small wrench, and the entire floor of the orbit raised, with overcorrection for swelling. If desired, the apparatus can be left in place for long periods.

A dislocated zygomatic arch generally heals properly if the malar bone is reduced to normal position. Otherwise, repair may involve the Gillies, Straith, or Matas procedure and possibly open operation and wiring.

Postoperatively, the residual defects are eventually compensated by readjustment of ocular muscle function, in most cases. If the results are not satisfactory, a second operation should be done.

¶ PRIMARY GLAUCOMA is not affected by ACTH, but treatment with the hormone sharply reduces high intraocular pressures due to anterior uveal disease. ACTH may thus help to differentiate between primary and secondary glaucoma, comment Eugene M. Blake, M.D., Rocko M. Fasanella, M.D., and Andrew S. Wong, M.P.H., of Yale University, New Haven, Conn. A salt-free diet was administered to 8 patients and diuretics were withheld. Starting on the second day of hospitalization, 20 mg. of ACTH was given every six hours in total amounts of 240 to 620 mg.

*Am. J. Ophth. 33:1231-1235, 1950.*

¶ HERPETIC KERATITIS is usually relieved by painless application of ether. At the New York Eye and Ear Infirmary, New York City, Bernard Kronenberg, M.D., employs 1% Pontocaine for anesthesia and outlines the affected area with fluorescein. A cotton applicator, wet with ether, is then rubbed over the surface until all epithelium is removed from the lesion and a narrow surrounding zone. Metaphen ophthalmic ointment is instilled, and the eye is kept bandaged for at least seventy-two hours. Since the lesion must be denuded of all remnants, treatment may be repeated on the second and possibly the third day.

*New York State J. Med. 50:2825-2826, 1950.*

# Stress a Precipitating Factor in Baldness

IAN ANDERSON, M.B.*
*Royal Infirmary, Sheffield, England*

ALOPECIA areata is apparently a reaction of the body to stress, with the hair as a target area.

The condition probably occurs in 2 to 3% of the general population. Loss of hair is permanent in less than 1% of cases, although with onset before the age of 10 years, the outlook is relatively unfavorable.

Ian Anderson, M.B., observed an incidence of 2% among 15,000 hospital outpatients recorded in five years. The 114 cases seen in two years consisted chiefly of simple alopecia areata, with some instances of alopecia totalis and universalis and a few of persistent alopecia, either continuous or recurrent.

The etiology of alopecia is still speculative, and two explanations must be considered. Most likely, disease is an adaptation to mental strain, trauma, or infection.

However, a virus of the herpes simplex type may lie dormant in the scalp, multiply locally under stress, and in some cases produce general infection involving all hairy parts and the nails.

Although the patient's relatives are affected in nearly one-fifth of cases, an inherited tendency to alopecia is doubtful. Intimate friends as well as close members of the family also have the disease simultaneously at times.

The most frequent precipitating factor is mental shock or acute anxiety, which in almost one-fourth of instances precedes onset by a few weeks. Other cases are often associated with various nervous disorders that have no temporal relation to loss of hair. The sexes appear to be affected equally, and incidence is not related to color of hair.

The disease may occur at any age but is commonest in youth. Roughly half of all cases start before the age of 21 years and approximately 1 in 5 after 40.

Alopecia begins as a solitary patch and may remain single or, within a few weeks, be duplicated elsewhere. Either the first or subsequent bare spots may be seen on the scalp, beard, or any other hairy surface.

Position of the initial baldness depends on sex. Among males, 60% are occipital and 25% frontal or vertical, whereas in females 27% are occipital and 56% frontovertical.

Associated lesions consist of occasional vitiligo and rather common nail changes of two types, lengthwise striations with a serrated nail edge, and pitting.

*Simple alopecia,* whether single or multiple, has a limited course of four to twelve months.

*Persistent alopecia* may come and go for years or advance slowly and continuously, forming either bands

* Alopecia areata: a clinical study. Brit. M. J. 4691:1250-1252, 1950.

and streaks or round frontovertical patches.

*Alopecia universalis* begins like the simple type and progresses to total baldness. Eventually all hair falls out, generally starting with eyebrows and lashes followed by pubic, axillary, and body hair.

About 1 in 150 persons with alopecia areata will be affected throughout life, yet prognosis is difficult in the individual case, particularly at an early stage. Generalized shedding of hair with complete loss of both eyebrows and whitening or loss of eyelashes is a bad sign. If hair falls rapidly, recovery is rare.

The outlook is worse for children than for adults. A year or more of alopecia totalis, with scalp completely bald but no loss of body hair, may be followed by regrowth, but alopecia universalis is nearly always hopeless.

Of the persistent forms, small recurrent patches eventually disappear, as a rule, and some of the bandlike forms progress to lifelong baldness.

¶ CHRONIC RECURRING ECZEMA may be helped by aureomycin and Chloromycetin. These drugs are indicated when a bacterial factor is the predominating or the exclusive etiologic agent. H. Storck, M.D., and P. Rinderknecht, M.D., of the University of Zurich, Switzerland, used aureomycin and Chloromycetin in the form of 25 or 50% ointments in wax, as oil-water emulsions, or as spray for 40 patients with either circumscript or generalized eczema. Oral therapy consisting of 250-mg. tablets, twice or four times daily for four to twenty days, was also given in some cases. If needed, the treatment was repeated after a week or two. The exudative lesions disappeared in 20 patients within a few days and the redness shaded off. The skin, which had been moist before treatment, dried and the accompanying infiltration was greatly reduced. The condition was much improved in 8 cases, and slightly improved in 4. In some cases the improvement lasted only during treatment, indicating that bacteria were an important but secondary etiologic factor. In the 8 other cases, the treatment was ineffective.

*Dermatologica 101:231-242, 1950.*

¶ TREATMENT OF ACNE with a multivitamin preparation may be more effective than vitamin A therapy alone, especially for the cystic type, finds Paul R. Kline, M.D., of New York City. A solution is used containing 10,000 units of vitamin A, 1,000 units of vitamin D, 10 mg. of thiamin hydrochloride, 1 mg. of riboflavin, 3 mg. of hydrochloride pyridoxine, 20 mg. of nicotinamide, 50 mg. of ascorbic acid, and 2 mg. of alpha tocopherol with 4.5% sorethytan monolaurate. Intramuscular injections of 2 cc. are given once a week. Only 1 of 25 patients failed to benefit.

*Arch. Dermat. & Syph. 62:661-665, 1950.*

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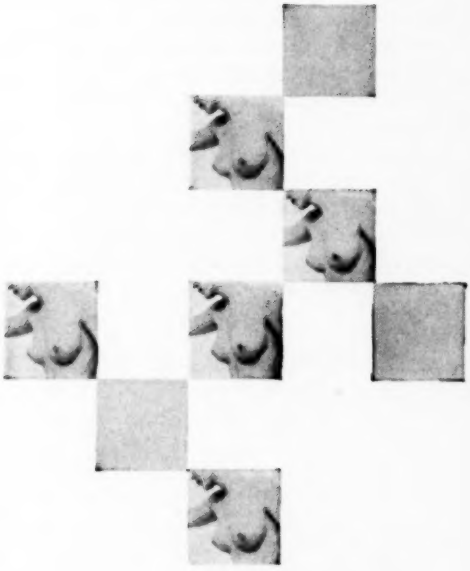

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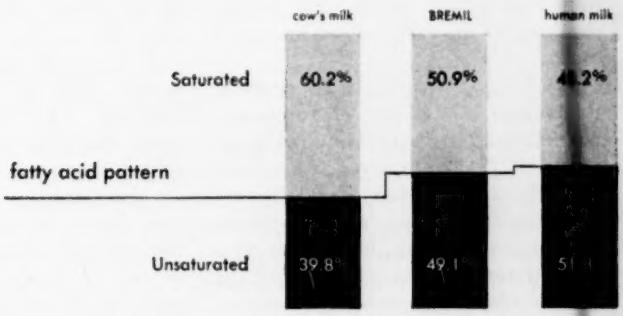


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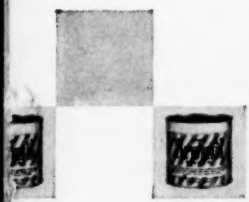

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1. Macy, I. G.: *J. Dis. Children* 78:589, 1949.
2. Jeans, P. C., and Marriott, W. McK.: *Infant Nutrition*, 4th ed., 1947.
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4. Nesbit, H. T.: *Texas State J. M.* 38:551, 1943.
5. *Bull. National Research Council*, No. 119, Jan. 1950.

# Stellate Block in Cerebrovascular Accidents

HOWARD C. NAFFZIGER, M.D., AND JOHN E. ADAMS, M.D.*
*University of California, San Francisco*

FUNCTIONAL interruption of the cervical sympathetic chain by procaine injection of the stellate ganglion may reduce neurologic defects resulting from cerebral vascular disorders.

When 155 patients with cerebral thrombosis, embolism, or vasospasm were treated with stellate blocks by Howard C. Naffziger, M.D., and John E. Adams, M.D., 59% recovered completely and 24% partially. Similar therapy for 70 patients with acute neurologic symptoms associated with trauma or intracranial operations achieved complete recovery in 43%, and partial recovery in 43%.

If the history, physical findings, or spinal fluid examination indicates an acute cerebral hemorrhage stellate ganglion blocks are not performed because of the possibility of augmenting the bleeding.

Injection of procaine into the region of the stellate ganglion by the anterior approach is reliable and safe. The needle is passed between the two heads of the sternomastoid muscle, 1 cm. above the clavicle, and inclined medially and horizontally until the seventh cervical transverse process is struck. The junction of the transverse process with vertebral body is then reached by shifting the point of the needle medially.

After aspiration to detect the presence of blood or cerebrospinal fluid, 2 to 3 cc. of 1% procaine hydrochloride is injected. If a Horner's syndrome is not produced by the initial dose, additional procaine is injected.

A favorable response, when such occurs, appears within five to ten minutes. The greatest benefit follows the first block. The number and frequency of injections depend on the condition of the patient and the effects of the initial injection. Steady improvement may follow one or two injections. Some patients require as many as three blocks daily for several days. When repeated therapy is necessary, a small catheter may be inserted through the needle and left in place for later instillations of procaine.

For some unexplained reason, a better response is frequently obtained when the ganglion contralateral to the site of intracranial disease is blocked than when the injection is made into the ipsilateral ganglion. This occurrence is of interest because of the fact that the effect of stimulation of the cervical sympathetic chain is ipsilateral.

The physiologic basis for improvement after stellate block is not understood. The total cerebral blood flow as measured by the nitrous oxide method is not altered. A consistent rise in cerebrospinal fluid pressure for a period of twenty to

* Role of stellate block in various intracranial pathologic states. Arch. Surg. 61:286-293, 1950.

forty seconds occurs after stellate block, suggesting a transient increase in the amount of blood entering the cranial cavity. This increase may be too small or of too short duration to be discernible by the nitrous oxide measurement. Theoretically, redistribution of the blood flow through small vessels without change in total blood flow may occur.

## Saphenous Neurectomy for Leg Ulcer

LAWRENCE N. ATLAS, M.D.*

EXTREMELY painful indolent ulcer just above the inner malleolus may be the effect of venous stasis with inflammation of the saphenous nerve.

About 2 of 3 lesions are due to previous phlebitis causing vascular obstruction or insufficiency, and the others to varicose veins.

The throbbing or burning pain is aggravated by bed rest, a pressure bandage, and all but the blandest ointments. A spot of extreme tenderness to pressure is felt at the inner tibial condyle of the knee, where the sensitive nerve pierces deep fascia.

For the ulcer with causalgic symptoms, Lawrence N. Atlas, M.D., of Western Reserve University, Cleveland, performs saphenous neurectomy. In 63 cases, pain was instantly relieved, and the ulcers healed two to four weeks after operation.

The nerve is resected in the proximal portion of the femoral sheath. After regional infiltration anesthesia, a vertical incision is made directly over the femoral artery from the base to the apex of Scarpa's triangle. Deep fascia of the thigh is incised over the sartorius muscle, and the muscle is retracted.

The femoral sheath is distended with procaine and opened along the exposed length, directly over the superficial femoral artery. When the nerve is squeezed with a hemostat, the patient will experience pain in the ulcer.

The proximal portion of nerve is injected with 2% procaine solution and cut, and the end is crushed but not ligated. The distal end is sutured into fascia lata above the replaced sartorius muscle.

For true varicose ulcers, when favorably situated and unusually painful and indolent, a high saphenous vein ligation is done through the same incision. Saphenous neurectomy is combined with proximal phlebectomy. For varicose veins complicated by the causalgic type of ulcer, neurectomy is considered an adjunct to secure immediate analgesia and rapid healing.

* Saphenous neurectomy in the treatment of selected cases of painful ulceration of the leg. Surgery 28:37-43, 1950.

# Repair of Distal Radioulnar Ligaments

FREDERICK LEE LIEBOLT, M.D.*
*Cornell University, New York City*

STRETCHING or tearing of the distal radioulnar ligaments partially dislocates the joint, allowing a disabling to and fro motion of the ulna.

Frederick Lee Liebolt, M.D., reconstructs the ligament with a strip of fascia from the thigh. Through drill holes in the posterior cortex, the bones are firmly laced together at the distal ends.

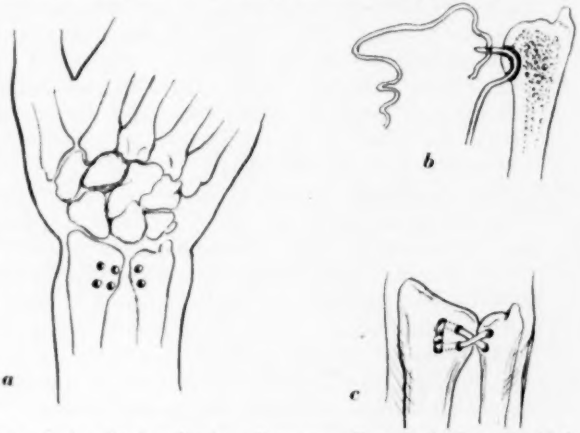
Subluxation usually results from traumatic pronation or supination of the wrist. Radiograms may not reveal joint derangement but frequently show fractures healed or ununited. Small bony fragments and bits of calcium are often seen about a broken styloid process.

Weakness of the joint is associated with pain, numbness, and tingling, and any forceful twisting or gripping is impossible. Many patients wear adhesive strapping or wrist bands to make the wrist stable. Heavy objects are carried with difficulty; if the hand is supinated, the ulna will protrude, thus causing the weight to be dropped.

A longitudinal incision of 6 cm. is made over the dorsal aspect of the joint. The extensor tendons are retracted, and the dorsal carpal ligament is incised transversely for 0.5 cm. only. Soft tissues over the joint are incised transversely and reflected.

The posterior cortex of each bone is drilled with 3-mm. holes. The first is placed in the head of the ulna, near the lateral border, and the second 1 cm. proximal, in the neck. At corresponding levels, 4 holes are drilled in the radius (Fig. *a*).

The fascial strip is started through the most distal and lateral opening in the radius, brought out medially, inserted diagonally in the ulna, drawn out, and threaded through remaining radial holes (Fig. *b*).




* A new method for repair of the distal radioulnar ligaments. New York State J. Med. 50:2817-2819, 1950.

With forearm in neutral position, the fascia is stretched taut and sutured across the lateral perforations. The new ligament thus forms an X over the outer aspect of the joint (Fig. *c*).

Before repair, the distal end of the ulna often swings in an arc of about 20 degrees, but the postoperative range is not more than 5 degrees because only slight relaxation is present.

## Results of Penicillin Therapy of Congenital Syphilis

LELAND J. HANCHETT, M.D., AND MAUDE E. PERRY, M.D.*

PENICILLIN is effective and safe treatment for congenital syphilis. However, if negative serologic status is to be achieved, the antibiotic should be given before the age of 2 and preferably during the first six months of life. Fortunately, total dosages of 300,000 units or more per kilogram of body weight may be administered to infants with little danger of serious reaction.

These conclusions are based by Leland J. Hanchett, M.D., and Maude E. Perry, M.D., of the U.S. Public Health Service on a study of 142 previously untreated patients with congenital syphilis who were given penicillin at the Midwestern Medical Center, St. Louis. Over half the patients were observed for more than two years after treatment.

Single courses of penicillin were given during periods of five to thirty-two days in graduated or equal doses administered intramuscularly every two or three hours. The total dosage per kilogram of body weight for patients under 2 was about 300,000 units; for those between 2 and 4, total dosage was 150,000; and for those 4 and over, 115,000.

Equal sized doses from the beginning of treatment produced only a slightly greater number of reactions than graduated doses. The reactions, 95% of which occurred with patients under 2, consisted of fever of from 100.6 to 104.2° F. The fever was of short duration and in no case was severe enough to prevent completion of treatment.

Of the patients who were observed for two years, all of those under 6 months of age when treated and 87% of those under 2 years had negative serologic reactions and were free of symptoms thirty months after treatment. When treatment was instigated after patients were over 2 years, 92% remained seropositive, but only 2 required retreatment.

* Results of penicillin treatment in congenital syphilis. J. Ven. Dis. Inform. 31:277-286, 1950.

# Medical Implications of Suicide

CARL L. KLINE, M.D.*
*St. Mary's Hill Sanitarium, Milwaukee*

Among all causes of death, suicide stands ninth, being nearly twice as common as homicide, and accounting for more deaths than the five most common communicable diseases.

Suicide should be viewed as an abnormal behavior reaction and not as an isolated incident. Most suicidal patients have always had difficulty in dealing with hostile impulses and aggressiveness in general. When a person turns these hostile, aggressive impulses upon himself, suicide results.

The most common misconceptions about the cause for suicide arise from the explanations offered so glibly by families, physicians, and the press: "despondency over ill health, worry over finances, an unsuccessful love affair, or grief over loss of a loved one." Such reasons are often precipitating factors, but not the causes of suicide.

Although a good deal is known about the psychodynamics of suicide, the basic cause is unknown. Statistics show that suicide is less common during periods of economic depression than in times of prosperity. Observations indicate pertinent factors in the personality of many patients who commit suicide. Carl L. Kline, M.D., believes that these factors should be known to the physician so that, when discovered, the patient may be recognized as a potential suicide.

- *Depression*—A depressed person may kill himself at any time, particularly in the involutional age, 40 to 65. If the patient looks and feels depressed, any of the following additional symptoms increase the suicidal danger: sleeplessness, hypochondria, loss of weight, inability to work efficiently or to concentrate, memory difficulty, carelessness about appearance, and feelings of guilt, unworthiness, or failure.

Many such patients go to the family physician because of insomnia, anorexia, loss of weight, and general malaise. When such a patient is seen, a psychiatric consultation should be insisted on.

- *Elation*—Patients in an elevated mood may be going through an early manic phase and are to be considered in the same category as depressed patients.
- *Oral dependence*—A potentially suicidal person may show a good deal of dependence upon others and upon oral gratifications such as excessive drinking or smoking, overeating, food faddism, and desire for medicine and drugs.
- *General factors*—The likelihood of suicide is increased if a beloved person has died during either of two periods in the patient's life—about the age of six, or at puberty.

* Suicide. Wisconsin M. J. 49:1111-1115, 1950.

The danger of suicide apparently increases for women during menstruation. Press reports of suicides strongly influence emotionally ill persons.

Many persons with suicidal tendencies attempt to satisfy the urge by seeking operations and, by unconscious mechanisms, acquire symptoms of diseases requiring surgery.

Psychiatric evaluation of the patient is just as essential for the depressed patient as is sputum examination for the tuberculosis suspect. The psychiatrist can evaluate the significance of the emotional factors.

Dynamically oriented psychotherapy is usually effective, but for some patients, particularly of the involutional age, electroshock therapy is often advisable.

By working together, the medical man and the psychiatrist can rehabilitate many depressed patients and avert many tragedies.

## Serologic Reactions in Psychosis

DAVID I. MACHT, M.D.*

SERA of patients with true psychoses exert a phytotoxic effect upon the root growth of some kinds of plant seedlings.

When collected during menstruation and active stages of pernicious anemia, pemphigus, leprosy, and trachoma, sera inhibit root growth of *Lupinus albus* seedlings. Recently, in a study of 1,200 cases, David I. Macht, M.D., of Sinai Hospital, Baltimore, has found that all organic and functional psychoses yield blood specimens showing definite toxicity. Such phytotoxic reactions are also exhibited by spinal fluids from psychotic patients.

Practically all patients with schizophrenia, manic-depressive states, involutional melancholia, cerebral arteriosclerosis with psychosis, and paresis have toxic sera. The degree of phytotoxicity parallels the intensity or gravity of the mental disturbance.

In borderline cases, such as alcoholics, convulsive patients, mental deficients, and psychopathic personalities, the phytopharmacologic properties are inconstant; however, with psychotic manifestations, phytotoxic sera are produced. The psychoneuroses show normal phytopharmacologic reactions, except in extreme cases, bordering on the psychoses, when toxic reactions are observed.

When patients improve with electroshock or insulin shock therapy, the toxicity of the sera gradually diminishes. Sera of cerebral tumor and lobotomy become detoxified after operation.

Diagnosis of psychosis is further aided by the fact that such phytotoxic sera are rapidly detoxified by in vitro irradiation with small doses of hard x-rays filtered through copper and aluminum.

* Pharmacologic reactions of normal and psychotic blood sera. South. M. J. 43:1049-1057, 1950.

# *Medical Forum*

*Discussion of articles published in* MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

## Recurrences of Endometrial Carcinoma*

TO THE EDITORS: The study by Dr. William F. Finn is a very interesting survey of the sites of recurrence of endometrial carcinoma. It emphasizes the important fact that most patients dying of this disease have extensive lesions when first seen and sometimes already have disease spread beyond the uterus.

Dr. Finn has also demonstrated rather nicely that involved lymph nodes in these recurrences are not necessarily those which would be subject to dissection in the ordinary radical hysterectomy but frequently occur in sites where surgery as yet has not been explored. It seems to me for these reasons that this work fails to give any substantial evidence that a radical hysterectomy for primary treatment would offer any advantage over the conventional complete hysterectomy now employed by most clinics. This study, on the contrary, substantiates the traditional belief that carcinoma of the corpus metastasizes through the upper broad ligament lymphatics and thence to the lumbar paraaortic nodes. For this reason it would appear illogical to extend the operation in this way except when the corpus carcinoma has extended to the cervix. In these cases it is our belief that a radical hysterectomy is logical because the disease will spread through the cervical lymphatics.

With respect to recurrences in the vaginal vault, it is my impression that, again, this investigation fails to present substantial evidence that these always represent lymphatic metastases rather than implantation spread. There is no doubt that the work of some clinics has demonstrated that proper preoperative radium application has significantly diminished the incidence of this type of recurrence. There is also no doubt that the results of such combined radiation and hysterectomy methods vary considerably, depending on whether the radium is applied by tandem or by a packing technic such as that which has given such excellent results in the hands of Heyman in Stockholm.

It is my belief, therefore, that there is no evidence to support a move for radical hysterectomy of the Wertheim type in carcinoma of the corpus uteri. General adoption of such a technic would do more harm than good for a lesion which can usually be irradicated by safer means.

S. B. GUSBERG, M.D.

New York City

*MODERN MEDICINE, Jan. 15, 1951, p. 107.

► TO THE EDITORS: Operation for endometrial carcinoma should be sufficiently extensive so that, if humanly possible, all involved tissues are removed at the time of operation. The minimal procedure should consist of total hysterectomy with bilateral oophorectomy. Early endometrial lesions can in all probability be removed by the operation and no further therapy is necessary.

Extensive gland dissection is not practical for the average operator. Therefore, the operation should be either preceded or followed by a course of deep roentgen therapy. Preoperative intracavitary radium should be administered for the patient who has moderate or extensive endometrial and myometrial involvement.

ROLAND S. CRON, M.D.
Milwaukee

► TO THE EDITORS: In our clinic, endometrial carcinoma is managed, in the vast majority of cases, by deep roentgen therapy to the extent of about 2,000 r to each of four ports. Six weeks later, eligible patients are subjected to total hysterectomy and bilateral oophorectomy.

On the basis of this form of treatment, we are able to report a 90.4% five-year survival rate based on 63 patients treated five or more years ago. Since preoperative x-irradiation was not mentioned in Dr. Finn's article, I believe this program of therapy and the excellent results obtained thereby should be included in any general discussion of this subject.

NORMAN F. MILLER, M.D.
Ann Arbor, Mich.

► TO THE EDITORS: It has been evident for a long time that results in the treatment of endometrial carcinoma are not as good as might be expected.

In most centers where large numbers of cases of carcinoma of the uterus are seen, endometrial carcinoma is treated by a combination of preoperative radiation therapy and total hysterectomy. The question as to the advisability of more radical surgery in the treatment of endometrial carcinoma may be a debatable one. However, the necessity for more radical or, we may say, more "adequate" radium therapy is most evident.

The majority of physicians using radium in the treatment of endometrial carcinoma have employed some form of tandem applicator in the uterine canal. Usually, the applicator contains several tubes, depending upon the length of the canal. Carcinoma near the tandem may well be destroyed, but areas in the top of the fundus and in the cornu or in cavities in the wall of the uterus will not receive sufficient dosage.

A number of years ago Heyman, of Stockholm, described the use of multiple tubes of radium, containing 10 mg. or more, which were packed into all parts of the uterine cavity. Dosages of from 7,000 to 8,000 mg. hours, thoroughly distributed to the uterine cavity, may be given by this method. Results have shown the very definite value of this technic. In fact, Heyman for a number of years has relied upon radium alone in these cases, resorting to surgery only when the radiation treatment failed.

In our opinion, thorough radium treatment of the endometrial cavity, followed by total hysterectomy in six or eight weeks, will offer the best hope for the arrest of endometrial carcinoma. Patients who are inoperable must be treated by radiation alone. This modality can be employed more effectively than is usually the case.

WILLIAM E. COSTOLOW, M.D.
Los Angeles

## Suction Knife for Tonsillectomy*

TO THE EDITORS: I feel that under certain circumstances the suction knife described by Dr. Shinji Yoshida might be a useful instrument, but I do not feel it would solve the complete problem of keeping the throat dry.

I personally object to sharp dissection of tonsils, except for the mucous membrane incision, but feel that if the suction dissector were blunt and slightly curved, it might be very useful. If it were an efficient suction which would not plug easily, it might possibly eliminate the use of an added suction. I would certainly withhold my opinion on its usefulness until I have tried it.

The idea is certainly an excellent one if one wishes to eliminate one more gadget in the mouth during tonsillectomy. It would appear to me that it might be much more useful for local tonsillectomy on adults than for tonsillectomy on children under general anesthesia.

DAVID D. DEWEESE, M.D.
Portland, Ore.

*MODERN MEDICINE, Aug. 15, 1950, p. 78.

## Fractures of the Spine and Pelvis*

TO THE EDITORS: Dr. Carlo Scuderi has presented a good resume of our present knowledge of spinal and pelvic fractures.

A few principles must be kept well in mind in the course of treatment. These principles are based on the anatomic structure of the bone involved, its physiopathology, the different forces acting on the fragments, and knowledge of the mechanism used for the reduction.

The gravity of these fractures depends more on the possibility of lesion of the cord than on the damage to the bone itself. In practice it is often impossible to differentiate the simple compression by a fragment or hematoma from the partial or total destruction of the cord.

The hyperextension by the Watson-Jones method is certainly the best approach in treating fractures of the dorsolumbar area of the spine. We have used it several times with good anatomic and functional results. Because this method permits early ambulation it prevents urinary and pulmonary infection.

Early laminectomy must be considered in all cases of paraplegia to deal with any compression which may be found or to repair damaged nervous tissues. A possible late complication in ankylosing spondylitis with compression of the nerve roots indicates liberation of the nerves involved and sometimes fusion by bone graft.

V. POTVIN, M.D.
La Tuque, Que.

*MODERN MEDICINE, May 15, 1950, p. 99.

# *Diagnostix*

*Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.*

## Case MM-188

### THE CLUE

ATTENDING M.D: The next patient, a 16-year-old high school girl, was transferred to the medical ward from the neurology service because of the development of anemia and purpura.

VISITING M.D: What was the reason for admission to neurology?

ATTENDING M.D: Delirium and right hemiparesis. The present illness began abruptly one week ago with fever, malaise, and weakness. Then headaches developed the next day and pains in the region of the umbilicus. She became anorexic and nauseated but did not vomit or have diarrhea. Her mother kept her home from school until three days ago when the patient became confused, then delirious, and weakness of the right arm and leg suddenly developed.

VISITING M.D: The first symptoms appear to have been caused by a neurologic disorder, but anemia and purpura change the differential diagnosis completely.

### PART II

VISITING M.D: Have the neurologic symptoms improved?

ATTENDING M.D: Not improved, really, but fluctuated. The hemiparesis has almost disappeared, but the patient is now aphasic and has left facial paralysis. Would you like to examine her?

VISITING M.D: Yes *(enters the patient's room)*. She is very pale and slightly icteric. There are numerous small petechiae in the skin and conjunctivae. Please give me an ophthalmoscope. *(Examines the fundi)* The optic disks and the arterioles appear normal but there are 2 small hemorrhages in the left retina and I find

the left facial muscles paralyzed, as you mentioned. The neck is supple, the lungs are clear. What did you note by examination of the heart?

ATTENDING M.D: There was slight tachycardia, but regular, a rate of 110. Blood pressure was 116/70. The heart did not seem enlarged on percussion. I heard a soft systolic murmur at the apex.

VISITING M.D: I agree, that makes subacute bacterial endocarditis an unlikely possibility. *(Returns to bedside and finishes examination)* The abdomen is soft and I found no mass or tenderness. The liver and spleen are not palpable. Reflexes are hyperactive on the right and the Babinski is present bilaterally. I'm at a loss to explain this girl's illness. She has widespread brain damage, fever, anemia, and purpura.

**PART III**

ATTENDING M.D: I have some laboratory data available, especially of the blood and clotting mechanism.

VISITING M.D: I think you are on the right track, but I hope you have made blood cultures, too. How severe is the anemia?

ATTENDING M.D: On admission to the hospital, the hemoglobin was 12 gm. per cent but fell steadily to 6 gm.

VISITING M.D: Did hematemesis occur while the hemoglobin was falling?

ATTENDING M.D: No, and the patient was not jaundiced at first, but a serum bilirubin yesterday was 0.2 mg. direct and 3 mg. total. Fecal urobilinogen was 640 mg. a day. Reticulocyte count was 6%. The leukocyte count has been normal throughout the hospital course, but the patient usually has a slight predominance of neutrophils. The blood indexes showed the erythrocytes to be normochromic and normocytic. Urine had a trace of albumin and 40 to 50 red cells per high-powered field in the urinary sediment. The Wassermann was negative. Cerebrospinal fluid was xanthochromic with a protein content of 50 mg. per cent.

VISITING M.D: Was the spinal fluid otherwise negative?

ATTENDING M.D: Yes. The pressures and dynamics were normal. Culture of the spinal fluid was sterile. Incidentally, several blood cultures were also sterile.

VISITING M.D: All right, now let's hear about the clotting mechanism.

ATTENDING M.D: They fit well with idiopathic thrombocytopenic purpura. The platelet count was 10,000, the bleeding time prolonged, clotting time normal, and the clot did not retract. Prothrombin time was also normal.

VISITING M.D: Acute thrombopenic purpura could cause all the patient's symptoms and most of the findings. However, the severe hemolytic anemia doesn't fit that diagnosis. I have just recalled a rather rare form of fulminating purpura which could explain this case. Have you investigated the hemolytic element of the illness?

ATTENDING M.D: Yes, but without much luck. Osmotic fragility of the erythrocytes was normal and the Coomb's test negative. Blood transfusions have failed to elevate the hemoglobin.

VISITING M.D: The disease which I fear is difficult to prove clinically. But a bone marrow biopsy may reveal a characteristic lesion in the small blood vessels of the marrow. In the meantime, the only therapy is repeated blood transfusions, although they may not help.

ATTENDING M.D: *(Next day)* The bone marrow revealed only erythroid hyperplasia. The megakaryocytes were normal in number and appearance. The pathologist could not locate any blood vessels in the specimen. The patient has become worse and I fear she will soon die. Her hemoglobin continues to fall but there is still no evidence of hemorrhage sufficient to explain the anemia. Do you think splenectomy is indicated?

VISITING M.D: I don't think so. Even if this were a typical case of acute idiopathic thrombopenic purpura, many authorities would prefer to be conservative since acute idiopathic purpura tends to improve.

ATTENDING M.D: Just what form of purpura do you think this is?

VISITING M.D: The combination of severe hemolytic anemia with thrombocytopenic purpura in an acutely ill patient with bizarre, fluctuating, neurologic signs and symptoms strongly suggests thrombotic thrombocytopenic purpura.

ATTENDING M.D: What?

VISITING M.D: You heard me correctly. This illness typically occurs abruptly in young females and causes hemolytic anemia and purpura. Central nervous system involvement is almost always prominent. The prognosis is uniformly poor. Death occurs within a few weeks.

ATTENDING M.D: What are the pathology and etiology?

VISITING M.D: The etiology is unknown but several factors point to an allergic factor. The endothelium of capillaries and arterioles is probably the site of the basic lesion. Platelets adhere to the endothelium lesions and form hyaline thrombi. The heart, kidneys, pancreas, and brain are most severely involved. Autopsies in fatal cases have occasionally revealed typical vascular lesions in the bone marrow. That is why I requested the bone marrow biopsy.

ATTENDING M.D: *(One week later)* Autopsy confirmed your diagnosis of thrombotic thrombocytopenic purpura.

---


*"It's not so big, really it's just your imagination."*

# *Short Reports*

*Chest Disease*

## ACTH for Beryllium Poisoning

The first agent known to alleviate beryllium granulomatosis of the lungs even temporarily is ACTH. In 8 patients with progressive disability, Dr. H. S. Van Ordstrand and coworkers at the Cleveland Clinic, Cleveland, reduced dyspnea and coughing. Vital capacity expanded, the appetite improved, weight increased, and spirits rose. The hormone was given in the largest amounts tolerated, for instance, 60 mg. every six hours for about two weeks, and in maintenance doses of approximately 20 mg. daily. At the time of report, effects of treatment had been watched for six months.

Cleveland Clin. Quart. 18:48-54, 1951.

*Cardiology*

## Antifoaming Agents for Pulmonary Edema

Acute pulmonary edema may be relieved by the inhalation of volatile substances that decrease the amount of fluid in the respiratory passages. Dr. Aldo A. Luisada of the Chicago Medical School obtained the best results with ethyl alcohol vapor, which decreased the severity of the edema in rabbits and prolonged the survival of the animals. The alcohol, while acting as an antifoaming agent, is well tolerated, and has no untoward side effects.

Circulation 2:872-879, 1950.

*Hematology*

## Regional Differences in Blood Groups

Geographic variations of blood group distributions are indicated by the records of the national blood program. Dr. George W. Hervey and associates of the American National Red Cross report that sample data collected in 15 regions show the southern areas to be comparatively favorable sources of O and northern areas of B.

J.A.M.A. 145:80-81, 1951.

*Honors*

## Chemical Award

The 1950 Hillebrand Prize of the American Chemical Society's Washington Section has been won by Dr. Henry Stevens, head of the Allergen Research Division of the Bureau of Agriculture and Industrial Chemistry, and his associates, Drs. E. Jack Coulson and Joseph R. Spies. The cash award was granted for discovery that cottonseed oil in food products does not cause allergy.

*Appointments*

## Surgeon General of the Navy

Rear Adm. Lamont Pugh, M.C., U.S. Navy, has assumed office as Surgeon General of the Navy and Chief of the Bureau of Medicine and Surgery, succeeding Rear Adm. C. A. Swanson.

# NEW THERAPY FOR OPHTHALMIC INFECTIONS

Furacin Ophthalmic preparations are especially valuable in external ophthalmic infections of bacterial origin: conjunctivitis, blepharitis—

because of stability at body temperature and their wide antibacterial spectrum.

Prophylactically they are indicated following chalazion operations, removal of foreign bodies and in corneal trauma and burns.

*Literature on request*

Reasons for the clinical effectiveness of Furacin include: a wide antibacterial spectrum, including many gram-negative and gram-positive organisms—effectiveness in the presence of wound exudates—lack of cytotoxicity: no interference with healing or phagocytosis—water-miscible vehicles which dissolve in exudates—low incidence of sensitization—stability.

Furacin Ophthalmic Liquid contains Furacin 0.02%, brand of nitrofurazone N.N.R. in an isotonic, aqueous vehicle. Furacin Ophthalmic Ointment contains Furacin 1% in a petrolatum-type base.

## *Furacin®*
## *Ophthalmic Liquid & Ointment*


EATON LABORATORIES Inc.
NORWICH, NEW YORK

*Public Health*

## Venereal Disease Control

An International Anti-Venereal Disease Commission of the Rhine has been created by the World Health Organization. The commission will coordinate antivenereal disease services of five Rhine bordering countries and establish a network of diagnostic treatment centers at the principal river ports. Cooperating in the venture are Belgium, France, The Netherlands, and Switzerland.

*Honors*

## Birth Control Research Fund

The Robert L. Dickinson Memorial has been created by the Planned Parenthood Federation of America to accelerate research looking toward the discovery of a universal inexpensive method of birth control and an effective treatment for infertility. The memorial was created in honor of Dr. Robert L. Dickinson, gynecologist, who died in November 1950.

*Ophthalmology*

## Heparin and Uveitis

Severity of uveitis produced in sensitized rabbits by the induction of antigen into the anterior chamber is diminished by heparin. Drs. Malcolm W. Bick of Springfield, Mass., and Ronald M. Wood of Baltimore assert that the inhibitory effect is obtained whether the heparin is instilled into the eye simultaneously with the antigen or is given systemically after the antigen has had an opportunity to act upon the sensitized ocular tissue.

Am. J. Ophth. 33:1878-1882, 1950.

*Medical Literature*

## ACTH Bibliography

The Army Medical Library announces completion of a bibliography on ACTH, cortisone, and related compounds. Compiled by the Reference Division of the library, the bibliography contains more than 3,400 references to the literature published from 1940 to the fall of 1950 and is arranged alphabetically by subject, with an author index. Copies of the 350-page work may be obtained from the Director of the Army Medical Library, Washington 25, D.C.

*Awards*

## Biochemist Honored

The Neuberg Medal of 1951 has been awarded to Dr. Severo Ochoa for his achievement in biochemistry. The Neuberg award is presented annually by the American Society of European Chemists and Pharmacists. Dr. Ochoa is professor and chairman of the Department of Pharmacology, New York University.

*Cardiology*

## Prevention of Arrhythmia

Ventricular cardiac arrhythmia produced with epinephrine during cyclopropane anesthesia may be prevented by injection of dihydronated alkaloids of ergot. Drs. Robert T. Capps, Henry M. Suckle, and O. Sidney Orth of the University of Wisconsin, Madison, found that dihydroergocristine is more effective than dihydroergotamine and dihydroergokryptine and much more effective than dihydroergocornine.

Am. J. Physiol. 165:702-708, 1950.

# *No activity pause at her menopause*

Your patient may continue her normal activities even to the extent of keeping pace with her daughter. She will be greatly encouraged, especially when the effectiveness of therapy measures up to expectations. In estrogen therapy an especially useful product . . . . . is:

## BENZESTROL

2,4 (p-hydroxyphenyl) – 3 – ethyl hexane

"Liver function tests, blood studies and urine examinations showed no toxic effects of the synthetic substance BENZESTROL"*

**Supplied:**

**Oral:** ***Benzestrol*** **Tablets**
0.5 Mg., 1.0 Mg., 100's & 1000's, 2 Mg., 5 Mg. — 50's — 100's — 1000's.

***Benzestrol*** **Elixir:**
15 Mg. per fluid ounce, Pint Bottles.

**Intramuscular:** ***Benzestrol*** **Solution in Oil;**
**Aqueous Suspension with 5% Benzyl Alcohol**
5.0 Mg. per cc. 10cc Vials.

**Local:** ***Benzestrol*** **Vaginal Tablets**
0.5 Mg. 100's.

**AVERAGE DOSE: Menopause** — 2 to 3 Mg. daily orally or ½ to 1cc parenterally every 5 days.

*Professional Samples and Literature upon Request*

NOTE:
Frequently, medication other than estrogens may be required during the menopause. Pleasant tasting Elixir Benzestrol is compatible with many substances.

*Reference: MacBride, C. M., et al.: A New Synthetic Estrogen, J.A.M.A., 123: 201 [Jan. 15], 1944.

*Schieffelin & Co.* 20 Cooper Square, New York 3, N. Y.

*Antibiotics*

## Viomycin and Tuberculosis

Progress of tuberculosis in guinea pigs is retarded by viomycin, whether the disease has been produced by streptomycin-resistant or streptomycin-sensitive tubercle bacilli. The inhibitory effect is not antagonized by the presence of serum. Drs. William Steenken, Jr., and Emanuel Wolinsky of the Trudeau Foundation, Trudeau, N.Y., assert that results comparable to those attainable with streptomycin are possible but require the administration of approximately 4 times more viomycin than streptomycin. The animals receiving viomycin did not lose weight or appear ill. No toxic effects or local tissue damage at injection sites were observed.

Am. Rev. Tuberc. 63:30-35, 1951.

► Human beings are able to tolerate viomycin in amounts of 50 to 75 mg. per kilogram of body weight per day for long periods of time. At the New York Hospital–Cornell Medical Center, New York City, Dr. Charles A. Werner and associates treated 10 patients with advanced pulmonary tuberculosis with daily intramuscular doses of viomycin of from 30 to 75 mg. per kilogram. Therapy lasted from two weeks to six months. Signs of renal toxicity and alteration of the serum electrolytes occurring during treatment are reversible by displacement therapy when the drug is discontinued. In some instances viomycin may be continued after appearance of abnormalities of serum electrolytes, provided adjuvant therapy with potassium and calcium salts is given concurrently.

Am. Rev. Tuberc. 63:49-61, 1951.

*Surgery*

## Thymectomy for Leukemia

Temporary improvement in symptoms and blood changes of lymphatic leukemia may result from early removal of the thymus and postoperative ACTH therapy. Dr. A. M. Earle and associates of the University of Arkansas and the Arkansas Children's Home and Hospital, Little Rock, treated 4 children aged 1½ to 4 years. Before operation, several transfusions and penicillin were administered. Beginning sixteen to forty-one days after thymectomy, 12.5 mg. of ACTH was given every six hours for two weeks, then 10 mg. every six hours for two to six days. In addition, 2 gm. of potassium chloride was received daily. Postoperative remissions were reinforced by ACTH, and lasted ten to fifty-four days from the start of therapy.

J. Pediat. 38:63-68, 1951.

*Cytology*

## Television Microscope

New facts about living cells may be discovered through the improvement of a television microscope being tested at Princeton University by Dr. A. K. Parpart. Color contrasts between the chemical and structural parts of living cells are registered by television technic more accurately than can be done by the human eye or the photographic plate. Possibly the procedure could replace the staining of killed cells as well as tedious photographing through color filters. The television microscope is being used in the investigation of cancer cells and tissues.

*a new type antihistaminic*

# 'PERAZIL' BRAND

CHLORCYCLIZINE HYDROCHLORIDE

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Rx prescription only

**New because its distinctive chemical component is a piperazine ring instead of the ethylenediamine group on which most antihistaminic compounds have so far been based; greater specificity of action is the result.**

**The clinical usefulness of 'Perazil' rests on its well marked and prolonged antihistamine action and the fact that only a few patients experience any side reactions: those who do so usually find them mild.**

***"The percentage and severity of side reactions was very low. Due to the longer duration of action of 'Perazil', less frequent administration of tablets was necessary".***

*Cullich, L. and Ogden, H. D.: J. South Med. Assn. 43: No. 7, July 1950*

| | |
|---|---|
| **INDICATIONS:** | Hay fever, vasomotor rhinitis, urticaria, allergic dermatitis and pollen asthma. |
| **DOSAGE:** | 50 mg. (one product) once or twice daily with water; may be increased if required in severe cases. |
| **PREPARATION:** | 'Perazil' brand Chlorcyclizine Hydrochloride 50 mg. Each compressed product is scored to facilitate division. |

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*Proctology*

## Removal of Rectal Stricture

A double loop, high frequency endothermic resector has been designed for fibrous strictures of the rectum and sigmoid. Tungsten wire loops allowing full view of the surgical field are mounted at the distal end of an insulated shaft and actuated through the handle. The proximal wire moves about 2 cm. along the shaft to mesh with the distal loop, and both can be rotated 360 degrees. Dr. Robert Turell of the Beth Israel, Harlem, and Montefiore hospitals, New York City, obtained good early results in 11 cases. Lesions removed included several congenital diaphragmatic or circular strictures, postoperative obstructions, tubular fibrous growth due to lymphogranuloma venereum, and portions of a recurrent carcinoma.

Am. J. Surg. 81:71-77, 1951.

*Oncology*

## Cancer Retarded by Hormone

Methyl androstenediol or methyl testosterone in daily oral doses of 100 mg. per kilogram inhibits growth of mammary adenocarcinoma or sarcoma 180 in mice. When Dr. E. J. Foley of Bloomfield, N. J., started treatment the day after malignant cells were implanted in mice, tumors were retarded for two weeks, then enlarged rapidly. Proliferation was not hindered by treatment delayed for five days after implantation, by subcutaneous injection of the same amount of hormone, or by smaller oral doses.

Proc. Soc. Exper. Biol. & Med. 75:811-813, 1950.

*Psychiatry*

## Therapeutic Acidosis

Acidosis of blood and spinal fluid often accompanies electric, insulin, or metrazol shock therapy and may be largely responsible for recovery from psychosis. Results are best when blood *p*H drops from 7.5 or 7.6 to about 7.1. If a single treatment lowers the value only 0.1 or 0.2, Dr. Julius I. Steinfeld of the Forest Park Sanitarium, Des Plaines, Ill., gives several shocks at five-minute intervals for full effect. In 4 intractable schizophrenics, improvement was hastened by combining shock with dietary acidosis. To aid formation of ketone bodies, carbohydrates were eliminated for twelve to fourteen days.

J.A.M.A. 145:226-227, 1951.

*Oncology*

## $P^{32}$ Therapy of Uterine Malignant Disease

Because absorption of phosphorus increases with rapid formation of new tissue, the uptake of $P^{32}$ by the uterus is augmented by estrogen. The two agents are therefore combined in treatment of genital malignant disease by Dr. Robert C. Grauer and associates at the Allegheny General Hospital, Pittsburgh. As a preliminary trial, young female rats were given subcutaneous injections of estradiol in alcoholic solution and radioactive isotope. $P^{32}$ concentration in the target organ then rose to a peak in forty-eight hours and remained active for seventy-two hours. The liver was not affected. When injected alone, $P^{32}$ produced a low, fairly steady uterine level.

Proc. Soc. Exper. Biol. & Med. 75:651-654, 1950.

*Hormones*

## Orally Active Estrogen

Progestational changes in the endometrium are augmented by equilin, a natural estrogen extracted from pregnant mare's urine. Drs. James T. Bradbury and Robert C. Long of the University of Lousville, Ky., report that the daily oral dose of 0.5 mg. given to postmenopausal women produces a response comparable to that obtained with 1 mg. estrone. An atrophic endometrium is restored to normal proliferative phase by administration of 1 to 2 mg. of equilin a day. Withdrawal bleeding is induced after daily doses of 1 mg. for ten days and 2 mg. for the subsequent ten days. Secretory changes in the endometrium occur within a week when 1 mg. of equilin is given daily in addition to 80 mg. of pranone. Early secretory changes and good decidual changes within two weeks are induced by 2 mg. of equilin daily together with 100 mg. pranone.

Am. J. Physiol. 163:700-701, 1950.

*Antibiotics*

## Urinary and Blood Infections

Neomycin is effective in eradicating sensitive organisms from the blood and urinary tract. Dr. Garfield G. Duncan and associates of the Pennsylvania Hospital, Philadelphia, employed neomycin in treatment of 10 bacterial infections due to one or more pathogenic organisms resistant to penicillin, aureomycin, chloramphenicol, and streptomycin. Intramuscular administration of 100,000 units every six hours for four doses and thereafter 50,000 to 100,000 units every twelve hours for five to seven days is adequate for most cases. Concentrations of neomycin in the serum and urine are built up gradually and usually reach a maximum after forty-eight to seventy-two hours of therapy. Therapeutic levels can then be maintained by the twelve-hour dosage schedule. Hearing was impaired in 1 patient but improved upon cessation of therapy. A concomitant high blood urea nitrogen level persisted after the drug was discontinued. Neomycin treatment should be terminated when the patient's hearing becomes impaired or the blood urea nitrogen increases.

J.A.M.A. 145:75-80, 1951.

*Serology*

## Diagnosis of Gonorrhea

The polysaccharide lysis test is probably more helpful than the complement-fixation test as an aid in diagnosis of gonorrhea. Drs. John C. Thomas and A. T. Mennie of the Central Pathological Laboratory, Natal, South Africa, found the lysis procedure to be more sensitive than complement-fixation in both acute and chronic cases. The vagaries of a bacterial antigen were overcome, and, as far as can be determined, the test may be made on slightly hemolysed sera which vitiate the complement-fixation test. The polysaccharide lysis principle is probably applicable to any condition in which serum antibodies are formed in response to an infecting agent from which a specific active fraction is extractable.

Lancet 259:745-746, 1950.

## In Acute Exanthems —

The fever of measles, the pruritus of chickenpox or the sore throat of scarlet fever will find pleasant relief in Aspergum.

For childhood's pains and fevers, Aspergum is ideal—it is willingly accepted by the patient and it presents acetylsalicylic acid in a rapidly effective form.

Aspergum is promoted ethically; is not advertised to the public.

Each pleasantly flavored tablet of Aspergum contains 3½ grains of acetylsalicylic acid—a dosage form uniquely fitted to childhood requirements.

**aspergum**

*Virology*

## Poliomyelitis Heightened by Cortisone

Resistance to poliomyelitis in mice is greatly weakened by intramuscular injection of cortisone with or without ACTH. After such treatment of mice that were already susceptible to infection, much shorter incubation periods and earlier deaths were noted by Dr. Gregory Shwartzman of Mount Sinai Hospital, New York City. In hamsters, which naturally have considerable immunity, cortisone transformed negligible illness into a rapid, violent, and uniformly fatal disease. ACTH alone did not affect the course of poliomyelitis and may have elaborated an unknown factor capable of neutralizing cortisone.

Proc. Soc. Exper. Biol. & Med. 75:835-838, 1950.

*Senescence*

## Avitaminosis a Factor in Senile Vaginitis

Extreme vaginal cornification after the menopause may be due to lack of vitamin A rather than to high estrogen levels, as often assumed. At the George Washington University, Washington, D.C., cornified vaginal epithelium of 5 women were restored to the natural postmenopausal state by two weeks of replacement therapy. Excessive cornification recurred during withdrawal of the vitamin. Dr. Lois A. Platt gave 100,000 units of vitamin A in corn oil parenterally once or twice a week and 25,000 units orally once daily. Cytologic smears were obtained with the Ayre spatula and were stained by Papanicolaou's method.

Am. J. Clin. Path. 21:38-40, 1951.


*"Don't worry about your practice, dear. All your patients are crazy about the new doctor."*

- Diabetes
- Cardiovascular Diseases
- Geriatrics
- Restricted Diets

## Why Viterra is Specifically Indicated

The minerals, trace elements and vitamins in VITERRA are now known to play both prophylactic and therapeutic roles in many specific conditions heretofore unidentified with nutritional deficiency.

**DIABETES**—VITERRA provides zinc, magnesium, iron and cobalt which have recently been found to prolong the hypoglycemic action of insulin. VITERRA also makes available additional vitamins and minerals necessary to protect the diabetic against deficiency states caused by the restricted diet.

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**RESTRICTED DIETS**—To hasten convalescence and help maintain optimal well-being—*especially during conditions requiring a restricted diet.*

*11 Minerals and Trace Elements and 9 Vitamins in One Capsule*

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| Cobalt | 0.1 mg. | | |
| Copper | 1 mg. | | |
| Iron | 10 mg. | Vitamin A | 5,000 USP Units |
| Iodine | 0.15 mg. | Vitamin D | 500 USP Units |
| Calcium | 213 mg. | Thiamine HCl | 3 mg. |
| Manganese | 1 mg. | Riboflavin | 3 mg. |
| Magnesium | 6 mg. | Pyridoxine HCl | 0.5 mg. |
| Molybdenum | 0.2 mg. | Niacinamide | 25 mg. |
| Phosphorus | 165 mg. | Ascorbic Acid | 50 mg. |
| Potassium | 5 mg. | Pantothenate | 5 mg. |
| Zinc | 1.2 mg. | Tocopherols, Type IV | 5 mg. |

J. B. ROERIG AND COMPANY • 536 LAKE SHORE DRIVE, CHICAGO 11, ILL.

*Gynecology*

## Spermicidal Bacteria

Antibiotics injected into the cervix may remove organisms responsible for sterility. *Escherichia coli, Streptococcus viridans,* and hemolytic streptococci are fatal to sperm in vitro, although diphtheroids, bacillary streptococci, and staphylococci appear innocuous. Bacteria from cervical cultures of infertile women were identified by Drs. C. S. Matthews and C. L. Buxton of Columbia University, New York City. In 25 cases, appropriate drugs were introduced into the cervical canal, mucosa, and stroma 4 times between cessation of the menses and ovulation. Although previously sterile for several years, after antibiotic treatment 7 women became pregnant and postcoital tests of 13 were improved.

Fertility and Sterility 2:45-52, 1951.

*Hematology*

## Electric Red Cell Count

Recently designed apparatus that measures electric conductivity of blood and plasma indicates the red cell count more accurately than ordinary methods. Since the erythrocyte is an almost perfect nonconductor, resistance of blood to direct current is proportional to cell concentration. The test requires no dilution, the quantity of blood samples is not critical, and errors of enumeration are eliminated. Drs. Frederic G. Hirsch, E. Clinton Texter, Jr., and associates of Cornell University, New York City, and Ithaca, N.Y., use a nomograph for rapid calculations. In the normal range of 5,000,000 cells, variations of only 240,000 represent actual differences in the number of circulating erythrocytes. With the common visual technics, differences must exceed 800,000 to be significant. The basic equation, derived from the Maxwell-Fricke formula, is $g = C_1 \frac{K_0 - K}{K_0 + K}$, wherein $g$ represents millions of red cells per cubic millimeter, $C_1$ a factor relating cell volume to count, $K$ and $K_0$ the specific conductances of whole blood and plasma. The value for $C_1$, as determined from 157 specimens of normal and pathologic blood, is 10.49.

Blood 5:1017-1048, 1950.

*Radiation Therapy*

## $Sr^{90}$ Applicator for Eye

Radioactive strontium has several advantages over radon in beta ray therapy of ocular disease. Half-life of twenty-five years avoids frequent replacement, harmful gamma rays are lacking, and manipulation is easy. An applicator constructed by Dr. H. L. Friedell and associates at Western Reserve University, Cleveland, contains $Sr^{90}$ in acid solution of strontium chloride. The inner lucite chamber is enclosed in aluminum and shielded with lead. The active end emits 5.4 roentgens per second at the surface and is applied directly to the eye for one minute, giving a dose of about 325 roentgen equivalents. Effects equal those of radon for superficial tumors of the eyelids and conjunctiva, vernal conjunctivitis, anterior segment tuberculosis, vascularization of the cornea, and some chronic corneal ulcers.

Am. J. Roentgenol. 65:232-244, 1951.


# A MORE ADEQUATE APPROACH TO MENOPAUSAL THERAPY

**TRANSIBARB** Capsules provide threefold, symptomatic relief in the management of the menopausal patient . . . adequate sedation . . . cerebral stimulation . . . control of vasomotor instability.

TRANSIBARB takes full advantage of the increasing use of a central nervous system stimulant combined with effective proportions of sedative medication. In addition, vitamin E is employed in the formula for its demonstrated efficacy in menopausal therapy.

In geriatrics, too, TRANSIBARB tends to minimize nervous apprehension in debilitated and mentally depressed patients.

Each TRANSIBARB Capsule contains phenobarbital, (Warning: May be habit forming), ¼ gr., d-desoxyephedrine HCl, 2.5 mg., and vitamin E (dl-alpha tocopheryl acetate), 5 mg.

DOSAGE: One capsule, an hour after breakfast; one capsule, an hour after lunch. In exceptional cases, a third capsule may be given, if required, an hour after the evening meal.

# TRANSIBARB

TRADEMARK

**Sedative—Sympathomimetic**

**SUPPLIED: Bottles of 500 and 1000 capsules, at all drug stores.**

*Literature and samples to physicians on request.*

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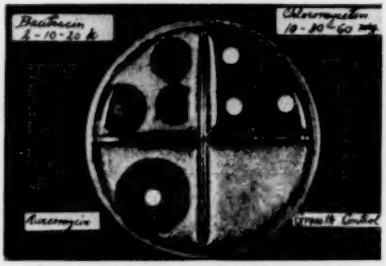
# Clay-Adams

## Simplified Technic for Antibiotic Sensitivity Tests

Antibiotic sensitivity tests are made simply, accurately and rapidly with the aid of a Felsen Quadrant Culture Plate and sterile paper disks impregnated with antibiotics. In many instances, correct antibiotic treatment can be determined even before the disease is diagnosed.

The procedure is simple: samples taken from a patient are cultured and the organism isolated. A Quadrant Culture Plate, filled with appropriate medium, is inoculated and three paper disks are placed in each quadrant. Disks* are available in three concentrations of the more common antibiotics. Each quadrant, therefore, holds three concentrations of a single antibiotic without crowding. After 12 to 24 hours' culture, the most effective antibiotic is readily determined.

The Felsen Quadrant Culture Plate is of standard Petri-dish size with two bisecting ridges. Although originally designed for use in isolating intestinal pathogens, the Quadrant Culture Plate finds wide usage in blood titer determinations, bacteriophage studies, or any case where it is advantageous to compare the growth reactions of one or more organisms on the same or different media.



*Quadrant Plate showing zones of inhibition with disks. Aureomycin test tablet (Lederle Laboratories) available in one concentration.*

*Difco Laboratories, Detroit 1, Mich.

### *You may be interested...*

- The ADAMS Illuminated Blood Typing Box, made according to the design of Dr. Louis K. Diamond of the Children's Hospital, Boston, Mass., is well suited for mass blood-typing tests.
- A new expendable nylon needle adapter and expendable plastic tubing will materially cut down the possibility of cross infection by infectious hepatitis in blood donor and transfusion work.
- Illuminated view-boxes for displaying MEDICHROMES or X-rays at conventions, exhibits, or for office reference may be obtained from Clay-Adams. Write for Form No. 499.
- Museum jars of prewar quality are now available in 22 sizes. Request Form No. 488.

**A New MEDICHROME** series covering the use of BCG vaccine in tuberculosis control has been completed. Made in cooperation with the National Tuberculosis Association, and prepared by Dr. Konrad Birkhaug of the New York State Department of Health, this series consists of 21 2″ x 2″ 35 mm Kodachrome slides.

Other MEDICHROME series are available for many specialties. Write, stating your field of interest, for complete details.

**SPECIAL LITERATURE AVAILABLE**

Detailed descriptions on the following may be obtained from Clay-Adams on request by number:

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| Felsen Quadrant Culture Plate | Form 497 |
| Skeletons | Form 493 |
| DURABLE Anatomical Models | Form 494 |
| BCG MEDICHROMES | Form 339 MTB |

# Newsletter

FOR THE MEDICAL AND BIOLOGICAL SCIENCES
Number 3 of a Series

**FROM CURRENT LITERATURE**

A simplified technic of exchange transfusion in cases of erythroblastosis fetalis using Clay-Adams animal-tested polyethylene tubing is described by Dr. Louis K. Diamond and associates in *New England Journal of Medicine*, Jan. 11, 1951. Tried at Boston Lying-in Hospital in more than 350 cases, the technic is described as "probably the simplest of methods in common use, as well as the least traumatic to the baby." In the new technic, alternate withdrawal and replacement of blood are accomplished through a single length of polyethylene tubing.

## Two-Way Action with C.R.I. Germicide

C.R.I. Germicide*, our new concentrated rust-inhibiting germicide, works two ways: (1) C.R.I. Germicide kills all common pathogens in 5 minutes (see table below); (2) C.R.I. Germicide is rust inhibiting, as shown by the photomicrographs.

C.R.I. Germicide is non-toxic and non-irritating. It is concentrated in 10 ml ampules, and may be diluted with *hard or soft water* to make one quart of working solution.

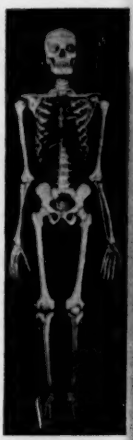
The figures below show how much a 1:100 working solution of C.R.I. Germicide can be further diluted and still retain its effectiveness against these bacteria in 10 minutes at 37° C:

| | |
|---|---|
| Eberthella typhosa | 50 |
| Escherichia coli | 40 |
| Diplococcus pneumoniae | 400 |
| Neisseria gonorrhoeae | 200 |
| Hemophilus pertussis | 35 |

*Formerly R.I.G.

*Photomicrograph of scalpel immersed in ordinary germicide 6 months shows pitting (left), and in C. R. I. Germicide 6 months, none.*

## Skeletons and Anatomical Models of Prewar Quality Again Available



For the first time in many years we can offer prompt deliveries on plain, muscular and disarticulated skeletons. The plain and muscular skeletons have been carefully prepared to reconstruct normal posture and limb movement. Damage from corrosion and rust is minimized by using plated metal parts and stainless steel wire.

In addition to skeletons, prepared skulls and bone preparations are also available. Skeleton stands and cabinets may also be had from Clay-Adams.

### DURABLE Anatomical Models

For the first time since the last war, DURABLE pressed paper anatomical models are again on hand. Many doctors have found these models invaluable for discussions with patients, apart from their widespread use in teaching programs on all levels.

These pressed paper models are practically unbreakable and metal reinforced where necessary. They are anatomically correct with clear labeling of all major structures. Models of eye, ear, brain, heart, nervous, circulatory and other systems are available.

---

**We invite you** to visit our exhibits at the following conventions: **April 30-May 4**—Federation of American Societies for Experimental Biology, Cleveland Auditorium. **May 6-10**—National League of Nursing Education, Hotel Statler, Boston. **May 27-31**—Society of American Bacteriologists, Edgewater Beach Hotel, Chicago. **June 2-5**—Catholic Hospital Association, Convention Hall, Philadelphia. **June 11-15**—A.M.A. Convention, Auditorium, Atlantic City.

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*Public Health*

## Aid to Palestine Refugees

The World Health Organization will continue to support the work of the United Nations Relief and Works Agency and Palestine Refugees in the Near East. Approximately 1,300 health officials are now actively engaged in health campaigns including malaria and fly control and sanitation among the half million Palestine refugees.

*Honors*

## Five Receive Blackwell Awards

Elizabeth Blackwell citations for achievement in medicine have been presented to: Dr. Sara Murray Jordan, director of gastroenterology, Lahey Clinic, Boston; Dr. Edith Maas Lincoln, Children's Chest Service, New York University; Dr. Marion E. Mantor, director of medicine, New York Infirmary; Dr. Louise Pearce, pathologist and president of Woman's Medical College, Pennsylvania; and Dr. Wilhelmina A. Ragland, director of obstetrics, New York Infirmary.

*Cardiology*

## Serum Fat Globules in Atherosclerotic Patients

The ratio of chylomicrons to lipomicrons is significantly greater in blood samples from fasting atherosclerotic patients than from healthy patients or those ill with diseases unrelated to atherosclerosis. The dark-field microscopic technic for visualization of neutral fat globules was employed by Drs. Willard J. Zinn and George C. Griffith of the University of Southern California, Los Angeles, in the study of blood sera from 30 patients with myocardial infarctions, 25 nonatherosclerotic patients, and 20 diabetic patients. The increase in chylomicrons occurs in diabetic patients as well as in atherosclerotic patients. Lung abscesses, asthma, rheumatoid arthritis, cirrhosis of the liver, traumatic fractures, and cancer of the rectum, sigmoid colon, or lung do not influence this variation. Similarity of fat absorption with respect to actual lipomicrons and chylomicrons, and discrepancy in proportion of chylomicrons in both fasting and late postabsorptive states suggest that the fundamental difference lies in the metabolic control of fat transport and not in the absorption of the fat across the intestinal mucosa.

Am. J. M. Sc. 220:597-603, 1950.

*Hematology*

## Cortisone and Eosinophils

The reduction of eosinophils noted after administration of cortisone or ACTH is probably due to rapid removal of the cells from blood. Neither production of eosinophils in bone marrow nor their passage from marrow to blood seems to be decreased. During cortisone therapy of 7 patients at Beth Israel Hospital, New York City, Dr. Robert L. Rosenthal and associates examined blood from the finger and sternal marrow. In all cases, blood eosinophils fell from 64 to 100%, but marrow values rose 42 to 372%. In relation to nucleated marrow cells, however, the eosinophilic percentage was not high.

Proc. Soc. Exper. Biol. & Med. 75:740-741, 1950.

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# *Basic Science Briefs*

*Virology*

## Virus Inhibitor from Friedländer's Bacillus

Multiplication of both mumps and pneumonia virus is retarded by the capsular polysaccharide of Friedländer's bacillus, type B. By adequate use of the inhibitor, Drs. Harold S. Ginsberg and Frank L. Horsfall, Jr., of the Rockefeller Institute for Medical Research, New York City, saved the lives of mice inoculated with a form of pneumonia otherwise invariably fatal. A single dose of 0.02 mg. of Friedländer's bacillus was generally sufficient if injected intranasally two or three days after introduction of the virus. The sugar compound seemed to act on a constituent of the host cell essential to formation of new viral particles but not directly on the invading organism.

J. Exper. Med. 93:161-171, 1951.

*Hormones*

## Sex Changed by Cortisone

Like some other androstanes, cortisone transforms ovaries of frog larvae into testes. Required dosage is high, however, in comparison with that of pregnenolone, progesterone, or desoxycorticosterone actetate. At the State University of Iowa, Iowa City, Drs. Emil Witschi and C. Y. Chang placed larval frogs of *Rana sylvatica* in water containing 1 mg. of cortisone per liter. At the time of metamorphosis forty-six days later, all subjects were typical males or hermaphrodites. The hormone acted primarily by interfering with the ovarian development. The gonadal cortex degenerated, and the ovarian sacs were gradually transformed to seminal and reticular tubules of the testis.

Proc. Soc. Exper. Biol. & Med. 75:715-718, 1950.

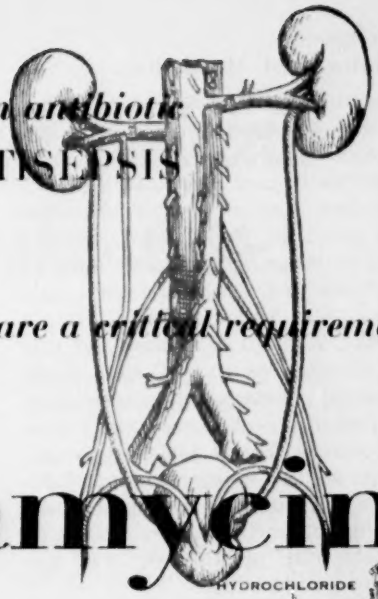
*Hematology*

## Physiologic Mechanism for Removal of Leukocytes

The possibility that derangement of the normal mechanism for the removal of leukocytes from the blood may be an etiologic factor in leukemia is suggested by Dr. Jonathan T. Lanman and associates of the University of California, San Francisco. Transfusions of leukemic blood infused into nonleukemic cancer-bearing recipients was followed by a transient rise in leukocyte count. The rise was entirely due to an increase in the mononuclear cell count and was less than anticipated by dye dilution methods. In 1 instance a reaction resembling anaphylaxis occurred and was associated with immediate profound leukopenia. The severe respiratory and circulatory symptoms may have been caused by the sudden removal of a volume of white cells in the lesser circulation. Hematologic and clinical data indicate that leukemia was not transferred to the transfusion recipients.

Blood 5:1099-1113, 1950.

*In the selection of an antibiotic*
*for* URINARY ANTISEPSIS



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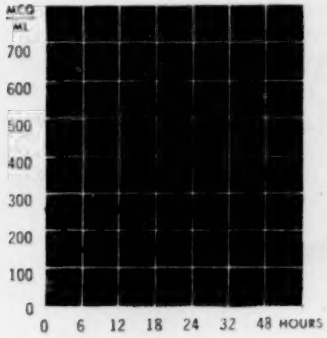
concentration of Terramycin in the urine following divided oral doses: 0.5 Gm. q 6 h.[3]




This newest of the broad-spectrum antibiotics is stable and active in the urine. High levels are rapidly achieved and easily maintained by oral administration. Within one-half hour after a single 2 Gm. dose, detectable amounts have appeared in the urine,[1] and a single 0.5 Gm. dose has been shown to produce high concentrations lasting twenty-four hours.[2] When multiple doses are given, continuous urinary concentrations of Terramycin in the range of 300-400 mcg./ml. are obtained, as shown in the accompanying chart.[3]

These observations are given added significance by the highly satisfactory clinical experience and the prompt response obtained with Terramycin in a wide range of infections of the urinary tract.

*Supplied:* 250 mg. capsules, bottles of 16 and 100;
100 mg. capsules, bottles of 25 and 100;
50 mg. capsules, bottles of 25 and 100.

1. Schoenbach, E. B.; Bryer, M. S., and Long, P. H.: Ann. New York Acad. Sc. 53:245 (Sept. 15) 1950.

2. Welch, H.; Hendricks, F. D.; Price, C. W., and Randall, W. A.: J. A. Ph. A. (Sc. Ed.) 39:185 (Apr.) 1950.

3. Welch, H.: Ann. N. Y. Acad. Sc. 53:253 (Sept. 15) 1950.

*Antibiotic Division* Pfizer *Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.*

*Biochemistry*

### Amino Acid Metabolism

Evidence is at hand to suggest that a cortical-thalamic-hypothalamic regulatory mechanism exists to maintain homeostasis of amino acid metabolism. Certain mental disorders are associated with altered hippuric acid excretion. For example, anxiety increases and catatonia lowers hippuric acid excretion. Drs. Harold Persky, Stanford R. Gamm, and Roy R. Grinker of the Michael Reese Hospital, Chicago, report alterations in hippuric acid metabolism following partial frontal lobotomy, vagotomy, or the administration of sodium pentothal, ephedrine, noradrenalin, and atropine. Alteration in the rate of hippuric acid synthesis is responsible.

Am. J. Physiol. 163:740, 1950.

*Virology*

### Mechanism of Viral Attachment

Electrolytes are essential to the linkage of a virus and the host cell. Different viruses have various ionic requirements. The union of *Escherichia coli* B with the T system of *Esch. coli* bacteriophages was investigated by Dr. Theodore T. Puck and associates at the University of Colorado, Denver. T1 virus does not adhere to its host in distilled water, but addition of salts yielding bivalent cations, such as those of calcium, magnesium, barium, and manganese, results in 100% cohesion. Salts of sodium and other monovalent elements require tenfold concentration to produce the same effect, and trivalent cations permanently inactivate the virus.

J. Exper. Med. 93:65-88, 1951.

*"Sure I gave you drops to dilate your eyes with, but I didn't tell you to lend them to the neighbors."*

## *Life's Weary Moments*

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# Anticoagulant Therapy for Thromboembolic Disease

(Continued from page 62)

schedule instead of an alternate case schedule. Approximately one-half of them received anticoagulants. Otherwise, all received the same therapy, the best available for coronary thrombosis.

The death rate for the patients not receiving anticoagulants was 24%, and for the anticoagulant patients, 14.9%. Thus the mortality incidence for a large group of patients treated in many scattered hospitals was reduced one-third by anticoagulant therapy.

The number of thromboembolic complications, such as extension of original thrombus, new thrombi in other areas of the coronary tree, or emboli to other parts of the body, showed an even more striking difference. In the control series, 36 per 100 patients had thromboembolic complications, and in the treated series, 14, of whom 5 did not receive anticoagulants because of contraindications and 2.5 developed thromboembolic complications during the first three days of therapy. Thus, actually, 6.5 complications occurred per 100 cases among the patients receiving adequate anticoagulant therapy.

Definite improvement was found regardless of how the problem was examined. For example, death and complication rates were reduced each week up to the fourth week; also the incidence of thromboembolic complications in different parts of the body declined. The reduction applied to most age groups and to both sexes. This work has since been substantiated by many studies from individual hospitals.

*Rheumatic heart disease with auricular fibrillation*—Our original report of the use of anticoagulants for patients who, during old rheumatic heart disease with auricular fibrillation, had experienced multiple emboli has been followed by subsequent studies of patients observed for periods up to four years, during which time the occurrence of emboli has been significantly but not completely controlled.

The administration of heparin followed by prolonged use of dicumarol greatly diminishes the incidence of such emboli. When these patients cease to take dicumarol, or when their

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prothrombin times are permitted to return to such low levels as 19 to 23 seconds, thrombi tend to re-form with subsequent embolic episodes, just as if anticoagulant therapy had never been given. Some of these patients have died as a result.

Sprague and Jacobsen, Cosgriff, and Askey have all confirmed the favorable results originally reported for such anticoagulant treatment. This is the only form of therapy which attacks the fundamental thromboembolic problem and therefore should be used for all patients who have had multiple emboli, unless contraindications exist. We do not usually advise anticoagulants unless the patient has had one or more emboli, since many persons with auricular fibrillation live for years without embolic episodes.

Again it should be emphasized that the amputation of one auricular appendage will rarely prevent embolism. Considering the seriousness of this operation, the indications for such surgery are exceptional.

*Congestive heart failure*—Patients with congestive heart failure are particularly susceptible to thromboembolic phenomena. This is in part due to the slowing of the blood stream.

Anderson and Hull and numerous other workers have reported definite decrease in the incidence of thromboembolic conditions in patients with congestive heart failure when anticoagulant therapy is given, as well as a reduction in the death rate.

These reports are promising, but impaired liver or kidney function, which is common with congestive failure, increases sensitivity to the action of anticoagulants. Therefore the anticoagulants should be used with caution in cases of congestive heart failure.

### Prophylactic Use of Anticoagulants

To prevent emboli after surgery or injury, the anticoagulants often are valuable prophylactic agents.

*Accidental trauma to blood vessels*—Injuries involving strains, crushing blows, or penetrating wounds usually damage blood vessels. Thrombi forming in small vessels may extend into larger vessels and, in some cases, break off to become emboli.

For this reason, anticoagulant therapy is indicated after the immediate risk of serious hemorrhage has subsided, espe-

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cially if medium sized or large veins are damaged. Varicosed veins are particularly susceptible to large thrombi which may release emboli into the circulation.

*Postoperative and postpartum cases*—Routine use of anticoagulants in postoperative and postpartum conditions reduces the incidence of thromboses and emboli. However, because of the difficulties and expense involved and because the incidence of thromboembolic complications in normal cases is relatively low, it is not justifiable to give all postoperative and postpartum patients anticoagulant therapy.

Anticoagulants are advisable when [1] venous thrombosis exists with or without pulmonary embolism, [2] previous attacks of thrombosis or embolism have occurred, [3] major abdominal, pelvic, or thoracic operations are contemplated, [4] operative procedures for fractures or other surgery of massive traumatic nature is undertaken, [5] the patient is over 40 years of age, or [6] surgery is performed for intraabdominal or other major malignant disease. The incidence of thromboembolic complications is definitely increased with cancer, especially cancer of the pancreas or liver.

*Special vascular surgery*—The most serious and frequent complication after vascular surgery arises from a tendency for a clot to form at the point of the operation. The liberal but controlled use of heparin during and immediately after operations on blood vessels, followed by anticoagulant therapy for several weeks, definitely reduces this risk.

### Other Possible Uses for Anticoagulants

Although the use of anticoagulants for the following conditions has been recommended, final conclusions as to their value cannot as yet be drawn.

*Chronic obliterative vascular diseases*—Anticoagulants may be effective in cases of thromboangiitis obliterans in which phlebitis and resulting pulmonary emboli have occurred. However, pulmonary emboli are rarely associated with thromboangiitis obliterans, probably because of the extensive inflammatory response which includes both the vein wall and lumen.

*Frostbite*—About ten years have elapsed since the suggestion was made that anticoagulants might be of value in the treat-

(Continued on page 132)

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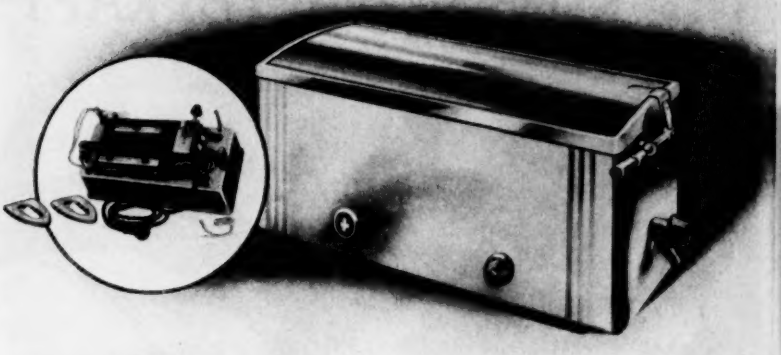

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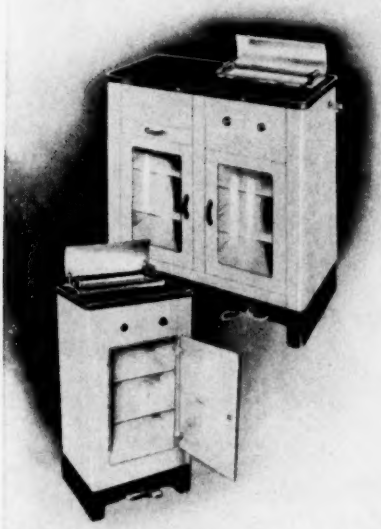

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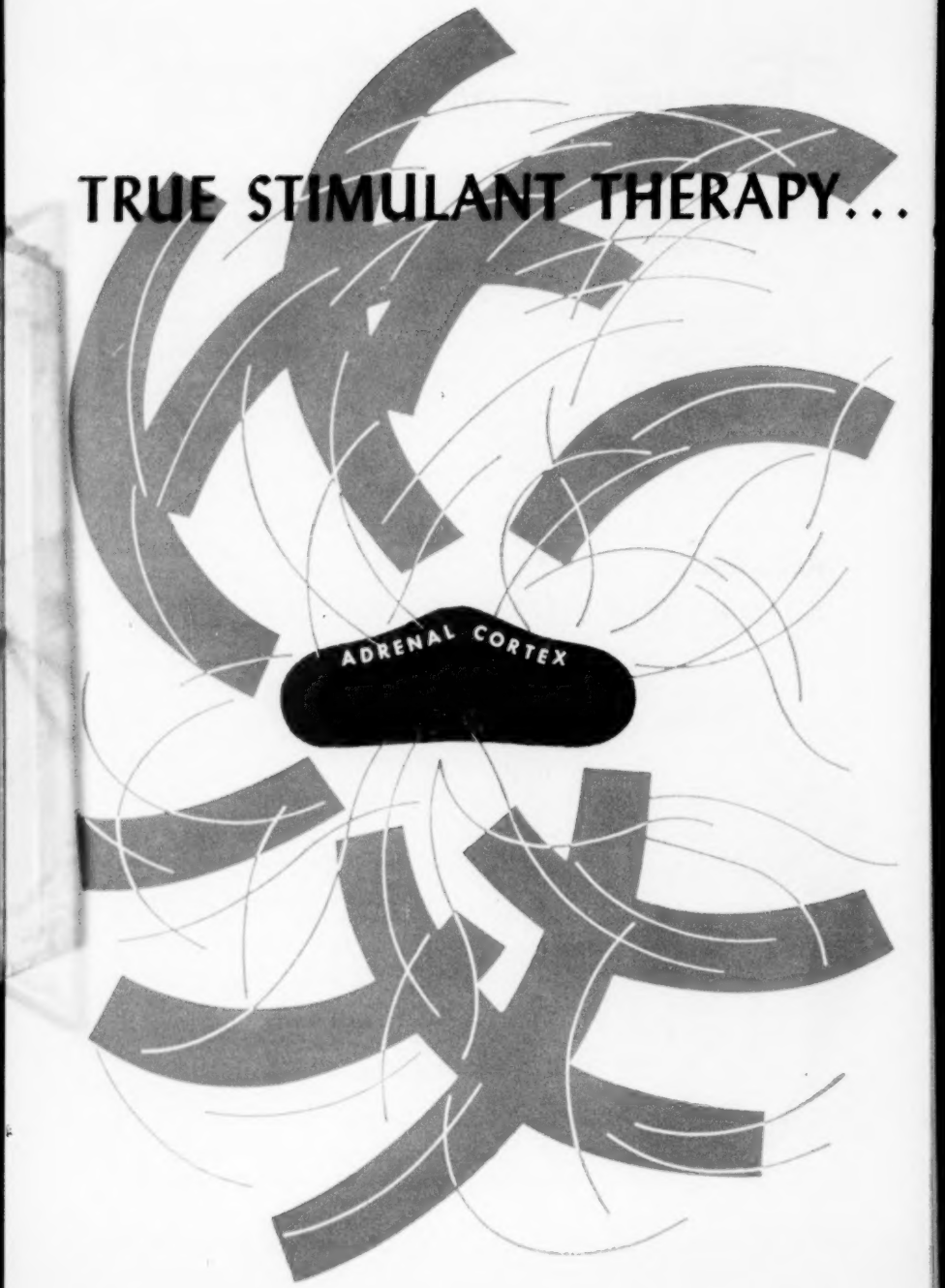

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PHYSIOLOGIC THERAPEUTICS THROUGH BIORESEARCH

ment of frostbite. Lange and Loewe have demonstrated the beneficial effects of heparin in acute frostbite induced experimentally in animals and man. These observations have not been generally applied.

The anticoagulant should be administered within a few hours after frostbite for best results. Unfortunately, this form of therapy is not readily available to many persons who suffer from frostbite, especially under military conditions. An oral anticoagulant with an almost immediate action would be highly desirable.

*Retinal vein thrombosis*—Heparin has been used in the treatment of thrombosis in the septal vein of the retina since 1937, when it was introduced by Holmin. Numerous encouraging reports have appeared. Dicumarol has also been employed. Although the general impression remains that the anticoagulants are valuable in the treatment of retinal vein occlusion, final conclusions must await further investigation.

*Cerebral thrombosis or embolism*—Foley and I have reported a limited experience of giving anticoagulants to patients with cerebral thrombosis.

Difficulties may arise in distinguishing between cerebral thrombosis, cerebral hemorrhage, and brain tumor. If the diagnosis of cerebral thrombosis or embolism appears definitely established and the spinal fluid fails to show xanthochromia or hemorrhage, anticoagulant therapy may be used cautiously to prevent propagation of the thrombus or the development of other thrombi or emboli in the cerebral circulation. Many of these patients have hypertension, an additional reason for caution in the use of anticoagulants.

## Long-Term Therapy

Interest has been steadily increasing in the use of anticoagulant therapy over long periods for ambulatory patients. This treatment has been considered important because of the number of persons with tendencies toward recurrent thromboembolic conditions.

For example, one of the most provocative of these situations is found in patients with auricular fibrillation in whom thrombi repeatedly form within the heart. The thrombi are released into the blood stream and lodge in other parts of the body. Another group includes patients with recurrent


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attacks of coronary thrombosis and a third, persons who continue to have new areas of thrombophlebitis when not given anticoagulants. Papers dealing with the technic and value of this approach have been published by Wright and Foley, Cosgriff, Askey, Nichol and associates, and others.

There seems little doubt that the incidence of thromboembolic complications and the recurrence of original thrombotic lesions can be sharply reduced and satisfactorily controlled when anticoagulant therapy is prolonged. The choice is a coumarin derivative, either dicumarol or Tromexan, since heparin is impractical for this type of treatment.

The physician who uses this therapy must be extremely alert and cognizant of the difficulties which may occur, and either he or his associates must be on call twenty-four hours a day in the event of any evidence of hemorrhage, thrombosis, or embolism. Both the nature of their diseases and the treatment render these patients susceptible to sudden and serious episodes at any time.

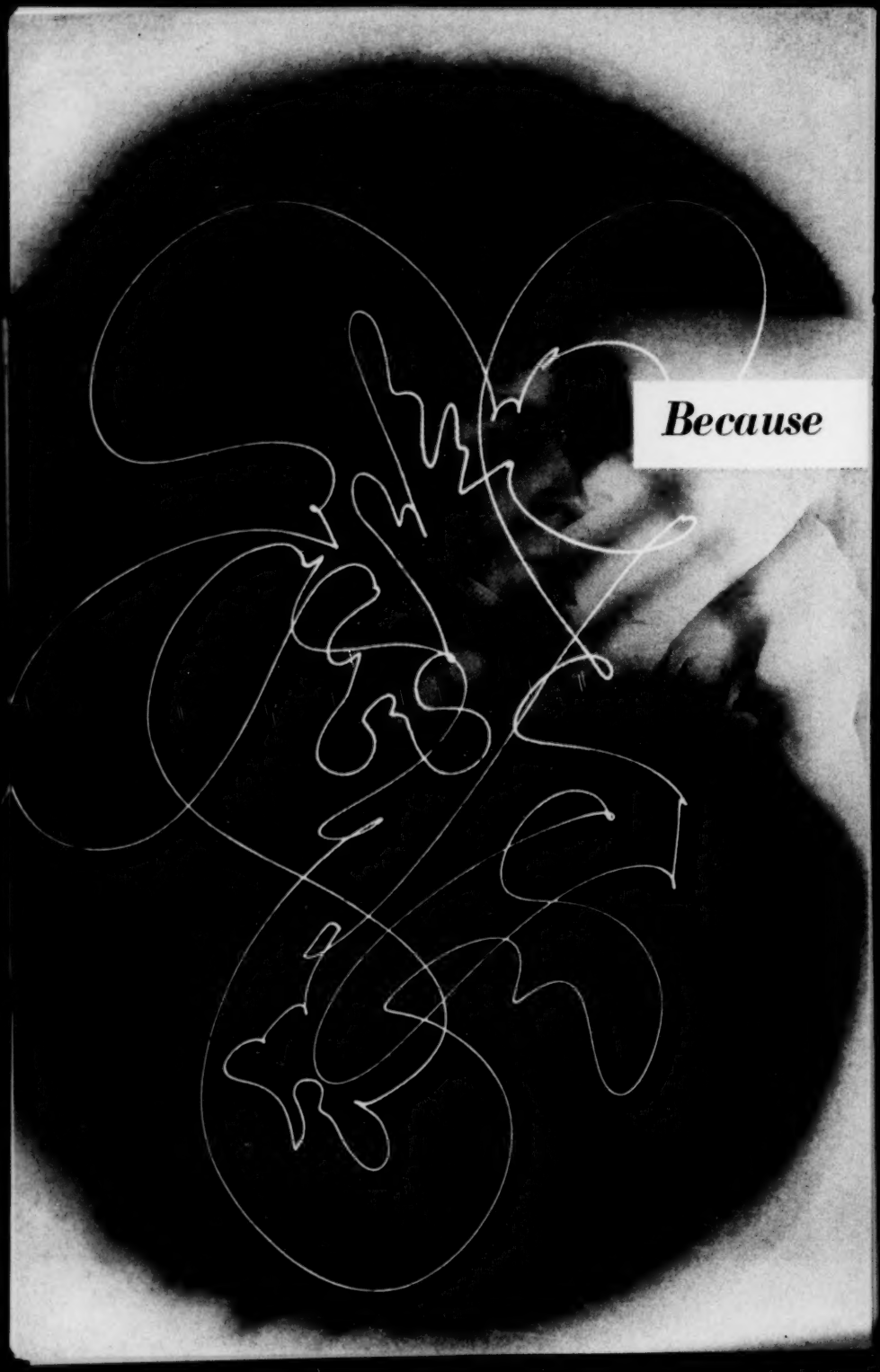
The dosage for each patient has to be carefully prescribed. The prothrombin time must be taken at regular intervals, preferably not longer than one week apart, and the patient must be cooperative and intelligent. The final requirement is that reliable prothrombin tests are available. With this combination, it has been possible for our team at the New York Hospital to care for more than 100 patients on long-term anticoagulant dosage without a single death from hemorrhage. Some of these patients have been taking anticoagulants for more than five years.

### Administration and Dosage of Heparin

Heparin was the first anticoagulant to be used with any success in the treatment of man. It has the advantage of rapid action. In a few minutes after intravenous injection, or within an hour after intramuscular injection, a pronounced effect on the clotting time of the blood is apparent. When heparin treatment is discontinued, the clotting time returns to normal in a relatively short time.

The disadvantages of heparin include the fact that administration is by injection. Moreover, when administered in crystalline form, frequent injection is necessary because of

*(Continued on page 138)*


Because

the rapid but brief period of action in the crystalline state. Heparin may also be given in a vehicle which releases the material slowly, lengthening the action to about twelve hours.

If given in crystalline form dissolved in aqueous solution, the average dose of heparin should be from 50 to 75 mg. every four hours intravenously. This usually produces a prolongation of the clotting time to 2 or 3 or more times that of the normal clotting period as determined by the Lee-White method using two or three tubes. To determine the reaction of a patient to this dose, the clotting time should be determined before administration, one-half hour after administration, and in three and one-half or four hours to find out how rapidly the clotting time returns to normal.

After four hours, the clotting time should remain about 1.5 to 2 times normal. For example, if normal clotting time is 8 or 9 minutes, the clotting time at the end of three and one-half or four hours should be from 16 to 20. Too often sufficient attention is not paid to this and the clotting time is permitted to become normal for considerable intervals between injections. This cannot produce the desired effect.

With a menstruum such as that contained in Depo-Heparin, the action is prolonged. The average amount should be 200 or 300 mg. for the initial dose. At the end of twelve hours the clotting time should be determined and, if below 20 minutes, a second dose of 200 mg. may be given. If the clotting time is above 20 minutes, the physician should wait until it falls below 20 minutes before administering a second dose in order to estimate the duration of action. Thereafter, 200 mg. every twelve hours is usually satisfactory, although for some patients the intervals may be sixteen or eighteen hours. It is seldom satisfactory to give larger dosages in expectation that one injection every twenty-four or thirty-six hours will suffice.

A disadvantage of using a long-acting menstruum is that once an injection has been made, activity cannot be accelerated when necessary. The period of activity may be shortened by administration of protamine sulfate, milligram per milligram of active heparin, or by the use of whole fresh blood transfusions. Heparin can be used for a period of time by either of these methods, but the procedure is expensive and requires repeated injections as well as clotting time tests and is therefore inconvenient on most hospital services or at home.

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| Ascorbic Acid | 0.01 gm (10 mg) |

**Supplied:** In bottles of 100 tablets.
**Dosage:** 2 tablets 3 or more times daily or as needed.

**Ref.** 1) Editorial: J.A.M.A. 138: 367-8 (Oct. 2) 1948
2) Smith, R. T.: Journal-Lancet 70: 192, 1950
3) Spitzer, J. M. and Shapiro, S.: Am. J. Dig. Dis. 14:80, 1948

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**for high yet safe salicylate levels**

**PABASYL** TABLETS

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The "common cold" sufferer to whom everything tastes flat will *feel* the difference of the effervescence of a carbonated beverage.

## CARBONATED BEVERAGES

1. tingle the jaded palate
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When sparkling carbonated beverages are intelligently consumed, appetites need not be lowered because these effervescent beverages pass quickly through the digestive tract as well as providing a quick source of energy.

If "force fluids" is your prescription for the "common cold" bottled carbonated beverages offer an easy way to get the patient's cooperation.

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### Administration and Dosage of Dicumarol

Dicumarol is given orally. The drug acts rather slowly, the maximum response usually occurring at the end of the second or third day. Thus, the dosage must be planned for effects that will appear two to three days later. This has obvious disadvantages. Furthermore, after the last dose has been administered, the effect of dicumarol may continue for as long as ten days. This presents difficulties, especially when evidences of hemorrhage arise.

The whole plasma prothrombin time by the Quick method or a modification thereof should range from 12 to 17 seconds before the first dose of dicumarol is given. Preferably blood should be drawn for a prothrombin test before administration of the first dose of dicumarol except in an emergency. In actual practice, the first dose may be given before the test, since the effect of the drug will not be significant for at least twenty-four hours. If the test should show hypoprothrombinemia, the effect of the dicumarol can be abolished by vitamin K or a transfusion. Thereafter, the prothrombin time should be determined each morning and the dosage for that day decided on the basis of each test.

The average dosage schedule is as follows: For most patients of medium weight who do not have a blood dyscrasia, liver disease, or severe kidney disease, the initial dose is 300 mg. If caution is desirable, 200 mg. may be administered for the first dose. Administration once a day appears to be adequate although sometimes divided doses are used.

Usually the prothrombin time is unaffected by the second day and the average dosage for the second day is 100 to 200 mg. By the third day the prothrombin time should be augmented in terms of seconds. The formula suggested by E. Sterling Nichol is quite satisfactory as a practical guide for dosage. In other words, with a control time of between 12 and 17 seconds, the therapeutic level should be between 2 and 2.5 times the control. If kept within this range, the administration of dicumarol is safe and therapeutically active.

Most of the failures noted by the committee on anticoagulants of the American Heart Association were associated with a lapse in therapy or too small dosage so that the prothrombin time was reduced to a level of 23 seconds or less. One cannot state that a patient has had "anticoagulant ther-

apy" when the dosage has been less that that required for a therapeutic effect on the prothrombin time. For most thromboembolic conditions, dicumarol therapy should be continued for not less than three to four weeks and, when the thromboembolic tendency persists, much longer, in fact, probably indefinitely.

The prothrombin time should be determined daily during the first few weeks so that the response of each patient to dicumarol may be evaluated. Later, the prothrombin time may be determined every other day, then twice a week, and finally once a week. We do not advise tests less often than once a week. Since dicumarol can be taken orally, the patient may be given instructions over the telephone as to how many tablets he should take. *Such instructions should be specific.*

In a hospital, blood for prothrombin time determinations can be taken from several patients and the tests performed at one time in the laboratory, rather than having separate tests made at the bedside of each patient as clotting time tests are done for heparin therapy. This is a timesaving and more accurate method of controlling the dosage. The present prothrombin tests, both one-stage and two-stage, are still complicated, and simpler tests are highly desirable.

### Administration and Dosage of Tromexan

Recently, reports of the use of Tromexan have appeared from Czechoslovakia, Switzerland, England, and France and also by Burke and Wright in this country. Tromexan acts similarly to dicumarol, predominantly on the prothrombin time rather than on the clotting time, although the clotting time is affected to some degree.

The advantages of Tromexan are: The prothrombin time can be prolonged within twelve to eighteen hours after oral administration of 1,200 to 1,800 mg. and, following the cessation of treatment, the action of the drug rapidly decreases and the prothrombin time almost invariably returns to normal within twenty-four to thirty-six hours. This is an important advantage if the patient shows any signs of definite sensitivity to coumarin derivatives or has a bleeding tendency.

Tromexan is approximately 20% as active as dicumarol and therefore should be given in correspondingly larger doses. The initial dose is usually 1,500 mg. unless the patient is


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**COD LIVER OIL** *that makes*

*the great difference in*

*the new*

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*hemorrhoidal* **SUPPOSITORIES**

Desitin Hemorrhoidal Suppositories *with* Cod Liver Oil *help to* . . . **relieve pain and itching • minimize bleeding • alleviate congestion • guard against trauma promote healing** by virtue of their contents of high grade crude Norwegian cod liver oil, rich in vitamins A and D and unsaturated fatty acids (in proper ratio for maximum efficacy).

***for greater patient comfort,*** *prescribe Desitin Hemorrhoidal Suppositories in hemorrhoids (non-surgical), pruritus ani, uncomplicated cryptitis, papillitis, and proctitis.*

℞ Composition: crude Norwegian cod liver oil, lanolin, zinc oxide, bismuth subgallate, balsam peru, cocoa butter base. No narcotic or anesthetic drugs to mask rectal disease. Boxes of 12 foil-wrapped suppositories.

***soothing • protective • lubricant***

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large, in which case 1,800 mg. may be given. Thereafter, therapeutic levels can usually be maintained by daily doses of 600 to 900 mg., or by a dose of 300 mg. two or three times a day. The divided dose schedule usually produces a more even prothrombin time curve. Tromexan has the disadvantage that dicumarol has of requiring daily prothrombin tests during initial treatment and later at longer intervals.

In our experience with approximately 200 patients, Tromexan has been easier to control than dicumarol and fewer hemorrhagic complications have appeared. Hematuria has been noted in 3 cases with severe renal damage. In 1 case with abnormal liver function, further alterations of this function and of the albumin-globulin ratio were noted. These were the only adverse effects observed for the first 112 patients treated with Tromexan. In later cases no increase in hemorrhagic complications has been seen. As with heparin and dicumarol, occasional patients have continued to have thromboembolic episodes while taking Tromexan. Malignant disease should always be suspected in such cases.

### Contraindications and Cases Requiring Caution

Conditions that represent contraindications to anticoagulant therapy or in which such agents should be used cautiously are shown in Table 2.

TABLE 2. CONTRAINDICATIONS OR INDICATIONS FOR CAUTIOUS USE OF ANTICOAGULANTS

| |
|---|
| Hypoprothrombinemia (prothrombin deficiency) due to vitamin K deficiency. Recent observations have shown that antibiotics which sterilize the intestinal tract apparently produce a deficiency of vitamin K which may render the patient more susceptible to anticoagulant therapy with coumarin derivatives. Further studies regarding this factor are essential. |
| Severe hepatic disease |
| Vitamin C deficiency |
| Renal disease |
| Blood dyscrasias with hemorrhagic tendencies |
| Surgical operations leaving wide open areas or surgical procedures involving the brain and spinal cord |
| Ulcerations, especially of the gastrointestinal tract |
| Subacute bacterial endocarditis |
| Active or very recent hemorrhage of any nature, such as cerebral vascular hemorrhage |

# A Proved Therapeutic Resource for the Control of Nausea and Vomiting of Gastrointestinal Origin

## EMETROL®

PHOSPHORATED CARBOHYDRATE SOLUTION

**EMETROL** (Phosphorated Carbohydrate Solution) quickly inhibits the smooth-muscle contractions of the small intestine and the pars pylorica, involved in the vomiting mechanism.[1] A concomitant lowering of blood-sugar levels is believed to indicate that EMETROL helps restore the deranged carbohydrate metabolism often observed in emesis.

Clinical experience[2] in 243 cases of nausea and vomiting, including 172 cases of epidemic vomiting, 43 cases of regurgitation in infants, 17 cases of toxic vomiting, and 11 cases of motion sickness, has demonstrated the impressive efficacy of this novel therapeutic approach.

**EMETROL** presents balanced amounts of levulose and dextrose in coacting association with orthophosphoric acid, stabilized at a physiologically adjusted hydrogen-ion concentration. It appears to provide the proper chemical environment for reducing hypermotility of the gut and promoting zymogen activation.

### FEATURES:

- Physiologic—not pharmacologic—action
- Free of antihistaminics, barbiturates, narcotics, and stimulants
- Nontoxic—no distressing side-effects
- Works quickly—often with a single dose
- Very agreeable taste
- Simple regimen

**supplied:** Bottles of 3 fl.oz. and 16 fl.oz.


1. Bradley, J. E.: Address before the Clinical Session, A. M. A., Washington, Dec. 6, 1949.
2. Bradley, J. E.; et al.: J. Pediat. 38: 41 (Jan.) 1951.


Kinney® **KINNEY & COMPANY,** *Prescription Products,* COLUMBUS, INDIANA

## Abuses of Anticoagulant Therapy

The greatest weakness in the application of anticoagulant therapy in clinical medicine is the human element. All anticoagulants require meticulous care to achieve adequate therapeutic effects without producing hemorrhage.

We have carefully analyzed the causes for failure in several hundred cases. Almost invariably the physician failed to administer or control the drug adequately or the laboratory did not produce accurate prothrombin tests so that the clinician was placed in an indefensible position. Thromboembolic or hemorrhagic complications are rare in the practice of physicians who are well trained and take the responsibility of anticoagulant therapy seriously.

A physician must know how these drugs act and their limitations, the technic for maintaining adequate therapeutic levels, the hazard of too intensive anticoagulant therapy, where to look for hemorrhagic manifestations, and how to treat such events promptly and efficiently. Unless he is prepared to take meticulous care when giving anticoagulants, a physician should not use this form of treatment but should call on someone who is well trained and equipped for this particular type of therapy.

## Treatment of Hemorrhagic Manifestations

A few red blood cells in the urine are not an indication for cessation of anticoagulant therapy. However, frank bleeding in the urine, or elsewhere, or severe purpura of the skin associated with high prothrombin times indicates the need for contracting therapy. Bleeding from the lungs or kidneys based on infarction does not constitute a contraindication to continued anticoagulant therapy but is instead a definite indication for continuing the treatment. In our experience, no serious episodes of bleeding have occurred with the use of anticoagulant therapy for pulmonary infarction unless another disease, such as carcinoma of the lung or gastrointestinal tract, coexisted.

We have become interested in investigating for cancer when bleeding occurs with low therapeutic prothrombin times. This has led to the diagnosis of cancer in a steadily increasing number of cases. For example, previously unsuspected cancer has been diagnosed in the lung from bleeding

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(therapeutic prothrombin level in 18-24 hours);

**2** ***smooth, even maintenance of prothrombin level***
within therapeutic limits;

**3** ***more rapid return to normal***
(24-48 hours) after cessation of administration.

In medical and surgical practice . . . as a prophylactic as well as a therapeutic agent . . . TROMEXAN extends the scope of anticoagulant treatment by reducing its hazards.

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# Crystalline Terramycin Hydrochloride ORAL DROPS

***the only broad-spectrum antibiotic available in drop-dose potency***

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*plus appeal* of attractive cherry color and pleasing cherry-mint flavor.

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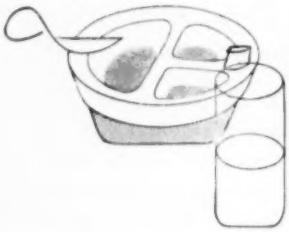

***affords ease and simplicity of administration*** and permits a further simplification of dosage schedules in mild and severe infections, and with patients of all age and weight levels.

Available at prescription pharmacies in 10 cc. bottles with specially calibrated dropper.

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when prothrombin was at therapeutic levels. Cancer has also been diagnosed in the intestinal tract on this basis and confirmed by roentgenograms. Uterine bleeding in women past the menopause and with the prothrombin time between 25 and 40 seconds has proved to be due to cancer of the uterus on several occasions.

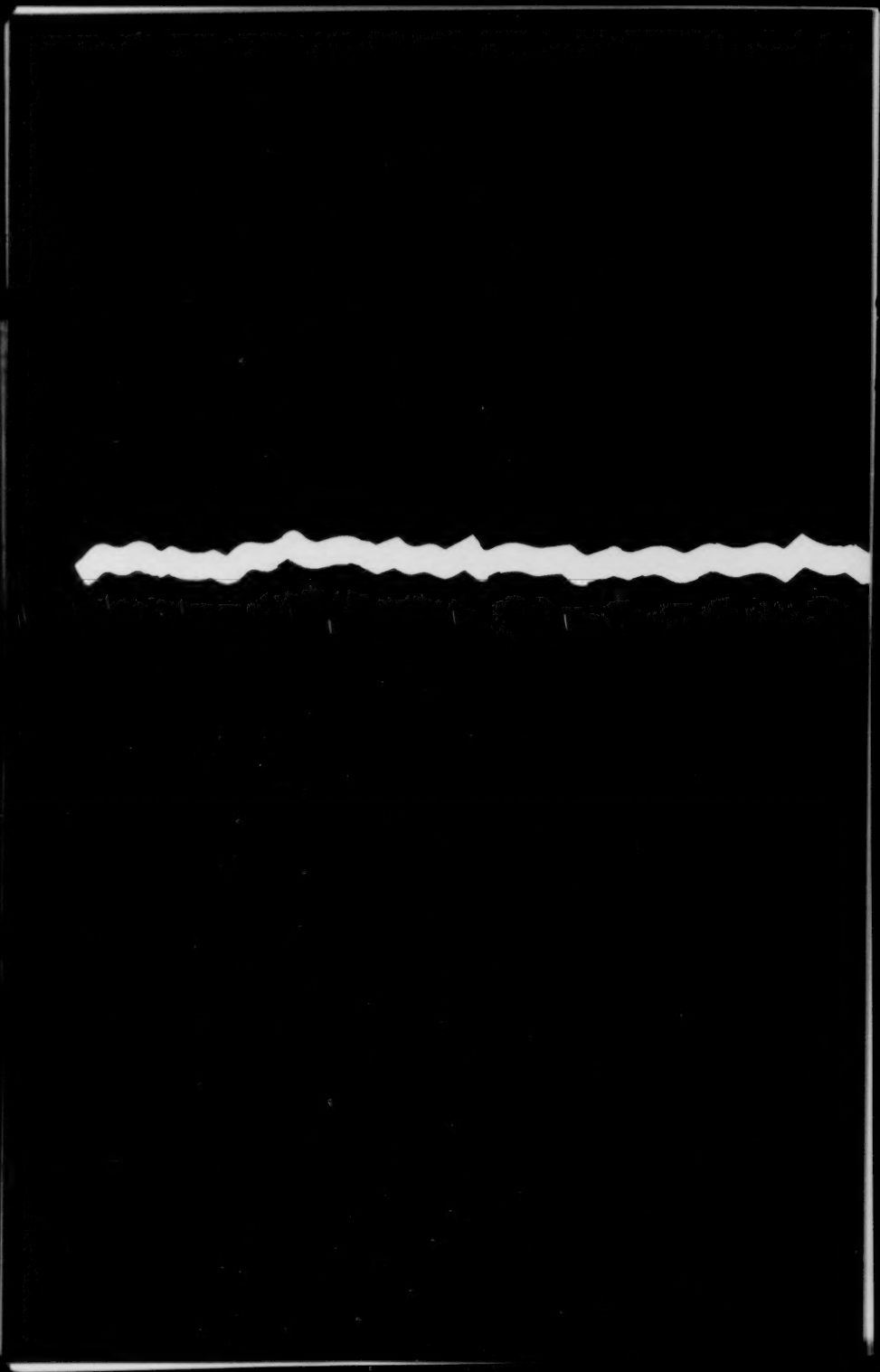
For slight bleeding proved to be due to excessive heparinemia, discontinuance of heparin may be sufficient; the clotting time usually falls within a few hours to normal. If the bleeding is excessive, whole blood transfusions should be used. Protamine is now becoming available and may be administered milligram for milligram for the amount of heparin considered to be active at the time of treatment. We have not found protamine necessary, however, and it should be remembered that this agent is capable of producing a variety of reactions.

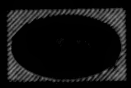
For bleeding caused by coumarin derivatives, the preferable initial therapy is water-soluble vitamin K in dosages of 72 mg. intravenously repeated in four hours and every four hours thereafter if necessary to bring the prothrombin time within normal range. For resistant cases, vitamin $K_1$ oxide is more satisfactory, given in dosages of 500 mg. or even 1,000 mg. intramuscularly or orally in capsule form.

Transfusions are also effective if necessary. Whole fresh blood should be used; banked blood older than one or two days is frequently not effective. The transfusions should consist of 250 to 500 cc. each and may be repeated for several days if prothrombin time becomes high.

The need for transfusions to counteract hemorrhagic manifestations of anticoagulants has been greatly diminished on our hospital service today because of the care with which patients are observed and also because Tromexan appears to produce fewer hemorrhagic manifestations than dicumarol. Occasionally, however, transfusions may be necessary, and it is advisable to have the patient's blood typed and have the Rh factor determined early in the course of therapy.

► *This is the second of three articles on drug therapy. The third article will appear in the May 1, 1951 issue.*





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Take a puff—DON'T INHALE. Just s-l-o-w-l-y let the smoke come through your nose. Easy, isn't it? AND NOW...

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*Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241-245; *N. Y. State Journ. Med.*, *Vol.* 35, 6-1-35, *No.* 11, 590-592; *Laryngoscope, Feb.* 1935, *Vol. XLV, No.* 2, 149-154; *Laryngoscope, Jan.* 1937, *Vol. XLVII, No.* 1, 58-60

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***The Preferred Uterine Tonic***


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William C. Marsh, Commander (MC) U.S.N., in a currently published paper[1], "Treatment of Herpes Zoster with Protamide," now available to physicians as a reprint, presents these findings:

"Thirty-one cases of herpes zoster were treated with Protamide. Good to excellent results were obtained in twenty-eight. In those failing to respond other factors besides age of patient may have been involved.

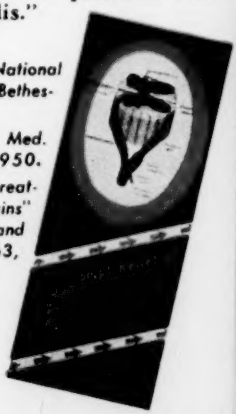
"No controls were in our study as thousands of intramuscular injections of other drugs given to patients with herpes zoster in the past, with no appreciable benefit, would adequately serve as a control.

"Pain, not merely the discomfort or itching, was the indication for treatment. Protamide (1.3 cc, the contents of one ampul) was given daily intramuscularly. No other local or systemic medications were given.

"The relief of pain was superior to that obtained when using either pituitrin, thiamine chloride, autohemotherapy, sodium iodide, or high voltage Roentgen therapy.

"The advantages of Protamide are the simplicity and absence of pain in administration, lack of reactions, and apparent safety.

"Costello[2] found that Protamide was effective in the relief of the posterior root pain of tabes dorsalis."



* *U. S. Naval Hospital, National Naval Medical Center, Bethesda, Maryland.*

*1. U.S. Armed Forces Med. Journal, September, 1950.*

*2. Costello, R. T. New treatment for "lightning pains" of tabes dorsalis, Urol. and Cutan. Rev. 51: 260-263, May, 1947.*

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**IPOTROPICS PROLONG LIFE** . . . Feeding hole pancreas corrects this metabolic disturb- nce and greatly prolongs life. Best (*) and ssociates identified choline as the active factor fresh pancreas and coined the word "lipo- opic" to describe its function.

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**N ONE STUDY—100%** "... but a handful of iabetic children . . . have survived 25 years of e disease without premature arteriosclerosis. a group of 60 . . . early lesions of retino- athy were noted in 100% within an average f thirteen years . . ."(*)

**EW DISCOVERY** . . . The high cholesterol vels of diabetes is not materially affected y moderate reduction of cholesterol and fat take. But Gofman (*) has discovered giant onglomerate plasma molecules of cholesterol, t and protein, which are correlated with herosclerosis and these may be eliminated by gid dietary means.

**ELATION TO LIPOTROPICS** . . . Such gidly restricted diets may be im- ractical in diabetic management. lowever, even more recent related udies* indicate that: (1) in hypercholesteremia, high plasma levels of phospholipids prevents development of the abnormal cholesterol molecules and atherosclerosis; (2) phospholipid levels are raised by lipotropics in lipotropic deficiency in man; (3) individual lipotropic requirements vary and diabetics may require additional lipotropics.

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**IN THE LIGHT** Of Present Knowledge **GERICAPS** (supplying therapeutic amounts of lipotropics combined with rutin and vitamins) plus Moderate-Fat, Low-Cholesterol Diets, offer great hope for preventing the premature vascular degeneration today characteristic of diabetes of several years' duration . . . early and continued prophylaxis with **GERICAPS** is indicated in diabetes.

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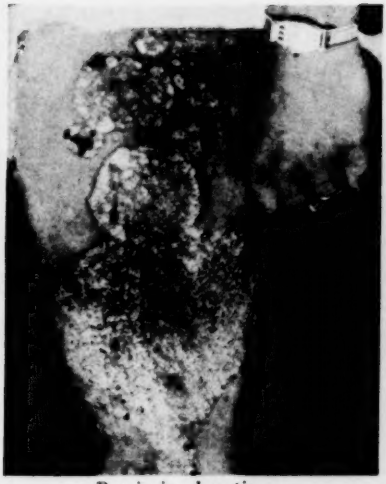
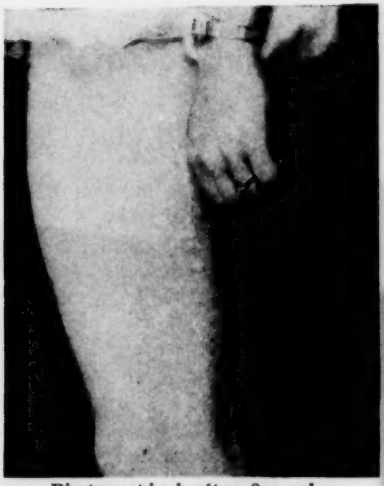


*Psoriasis—duration 15 years*



*Photographed after 8 weeks treatment with Mazon*

# *Mazon and Mazon Soap act quickly and bring skin infections* under control*

***These infections include**

**Eczema**
**Psoriasis**
**Alopecia**
**Dandruff**
**Ringworm**
**Ivy Poisoning**
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The fundamental principles employed in the development of Mazon—careful selection of ingredients, skillful blending for ease of application, absorbability and patient acceptance—promote the successful treatment of obstinate skin conditions.

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*Each Tablet Rutol contains:*

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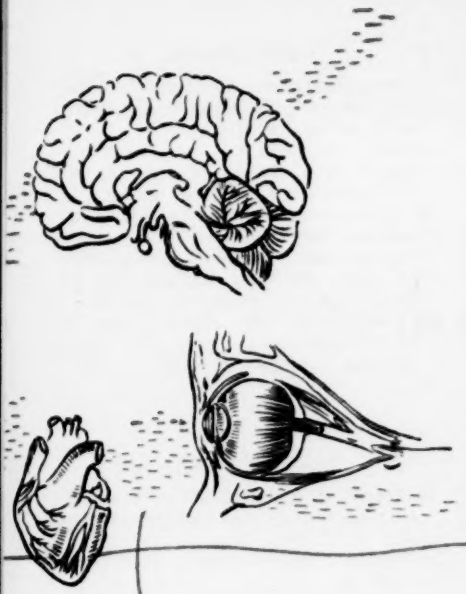
| Rutin | 10 mg. (1/6 gr. approx.) |
| Phenobarbital | 8 mg. (1/8 gr.) |
| Mannitol Hexanitrate | 16 mg. (1/4 gr.) |

**Bottles of 100, 500 and 1000 tablets.**



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1. Griffith, J. Q., Jr., and Associates: Proc. Soc. Exper. Biol. & Med., *55*:228, 1944.

2. Shanno, R. L.: Amer. J. Med. Sci., *211*:539, 1946.

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*"Where do you want me to put my sample, Doc?"*

in convalescence . . .

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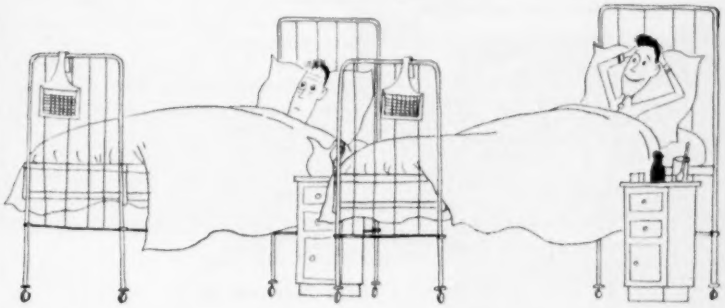
big difference



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# PATIENTS . . . *I Have Met*

*The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.*

## *After Aesop*

Once upon a time there were 2 microbes swimming in the arterial blood stream of a horse. Getting bored with their surroundings, they battled their way into the venous blood stream. Shortly thereafter they both died. Moral: Never change streams in the middle of a horse."—M.M.D.

*Little 4-year-old Roger (after rectal examination): "I didn't cry after I had my oil checked, did I, mommy?"*—A.W.D.

## *She Earned It*

My receptionist reported the following conversation between two of my patients in the waiting room.

"Well, I can be thankful for one thing, at least," said a woman who recently had undergone an operation.

"What's that?" asked the second woman.

"I won't get a big bill for my operation. Why the doctor himself told me that it was only the stiff fight I put up that saved me."—W.J.B.


*"Come in, Doc, come in."*

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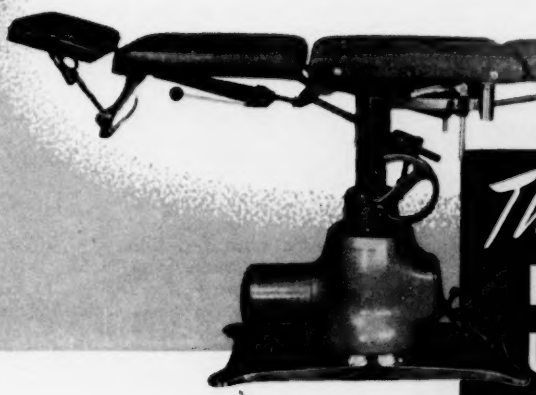

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## *Etiologic Factor*

A resident at one of our local hospitals was called into the clinic to examine a young lady. The doctor found the patient to be in the second trimester of pregnancy. The young lady objected that she could not be pregnant because she wasn't married and, besides, the only unusual thing that had happened to her in the past six months that might have a bearing on her condition was that she had fallen down.

"Very interesting," murmured the resident, "and who fell on top of you?" —P.K.

## *Alibi*

"Where have you been for the last two hours?" demanded my wife.

I sighed wearily and replied, "I met Mrs. Brown on the street and asked her how she was feeling."—H.E.C.

*"Should I see you between now and the next time I come?"*

## *Miracle at Gowanda*

(Item sent in by O.K. taken from the *Jamestown (N.Y.) Post-Journal)*

Gowanda—Petro Erney, 51, Depot Hotel, suffered fatal brush burns Thursday when he fell from an automobile. Further details of the accident are lacking. Mr. Erney was treated in the Tri-County Memorial Hospital, and discharged.

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*in Obesity!*

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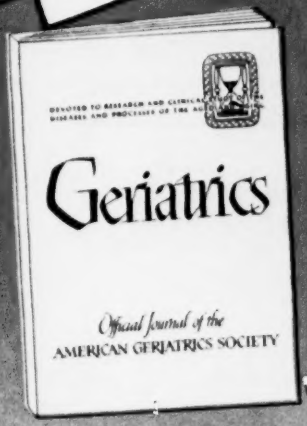


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1. Filler, W.: J. A. M. A., 143: 1235 (Aug. 5,) 1950

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